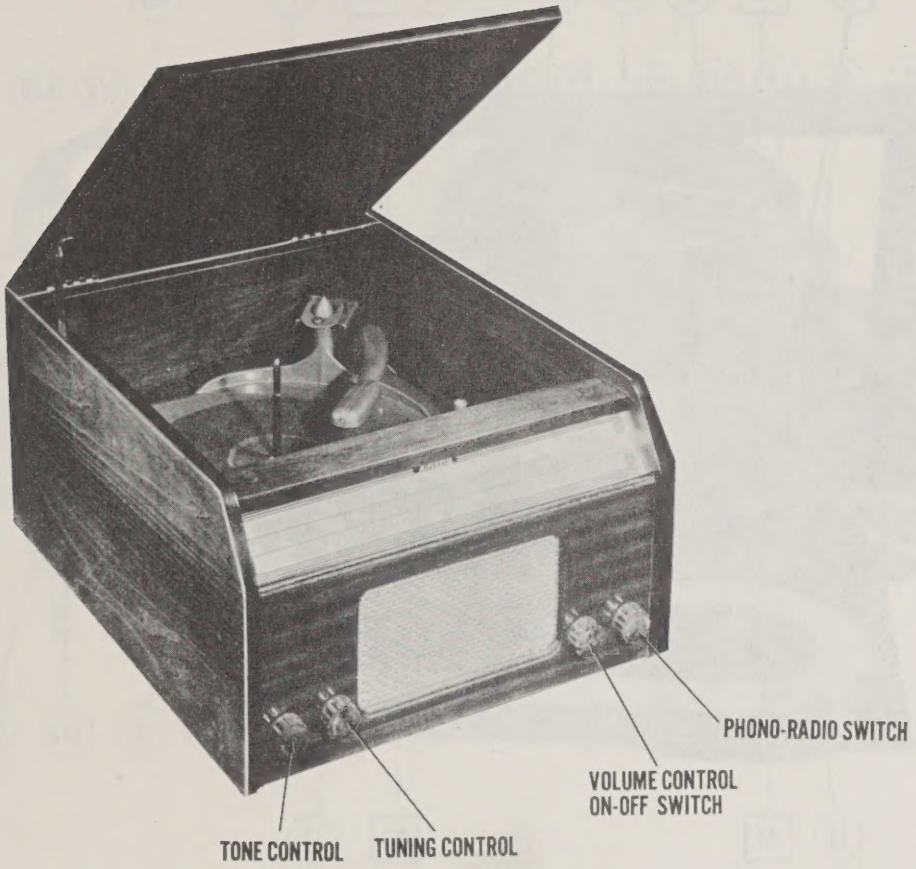
CONTENTS

TRADE NAME	MODEL	FOLDER NO.
Aircastle	6042	499-1
Aircastle	121124	499-2
Bendix	687A	499-3
Brunswick	T-4400, T-4400 ½	499-4
Clarion	12801	499-5
Emerson	579A, 596 (Ch. 120034A)	499-6
Emerson	585 (Tele. Rec.)	499-7
Firestone	4-A-69 (Code No. 155-8-B5)	499-8
Ford	8MF980 (8A-18805B)	499-9
Gilfillan	68-48	499-10
Gon-Set	3-30 Meter Converter	499-11
Hallicrafters	SX-62	499-12
Hoffman	C-518	499-13
Masco	MB-75	499-15
Meck	XA-701, (Tele. Rec.)	499-16
RCA Victor	8V151 (Ch. RK-121C, RS-123D)	499-17
Silvertone	8086 (Ch. 101.814-5C), 8086A, 8086B (Ch. 101.814-6C), 8102, 8102B (Ch. 101.814-2B), 8102A (Ch. 101.814-3B)	499-18
Tele-Tone	190 (Ch. Series AZ)	499-19
Westinghouse	H-210, H-211 (Ch. V2144, V-2144-1	499-20



AIRCASTLE
MODEL 6042

AIRCASTLE MODEL 6042

TRADE NAME	Aircastle, Model 6042
SUPPLIER	Spiegel, Inc., 1061 W. 35th St., Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio, Superheterodyne Receiver with Loop Antenna
TUBES (Five)	Types 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7GT Det.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-125 Volts AC Rating .30 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1720 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning capacitor fully closed and set right hand edge of dial pointer saddle to right hand edge of dial backplate.

Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1 MFD	High side to rear stator of Tuning Cap. Low side to B-.	455KC	Turn Tuning Cap. Fully open.	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1 MFD	"	1720KC	"	"	A5	Adjust for maximum output.
3.		Loop	1400KC	Tune for maximum signal	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis , Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

AIRCASTLE MODEL 6042

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7GT	12SA7GT	8AD	
V2	IF Amp.	12SK7GT	12SK7GT	8N	
V3	Det.-AVC.-AF.	12SQ7GT	12SQ7GT	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	EC-14	PRSA150/40-40	EDL4415		DSB-4030 20-150	TA-440	Blue Filter
C1B	40	150		PRS150/20	BR2015			UT-201	Red "
C1C	20	150							Yellow "
C2	.1	400	PC-8	P488-1	GT4P1		ST-4-1	72P2	Line Isolation
C3	.05	400	PC-2	P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C4	50	500	MC-4	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc.Grid Cap.
C5	.25	400	PC-4	P488-25	GT4P25		ST-4-25	TC-2	Bias Filter
C6	100	500	MC-2	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C7	500		MC-5	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Tone Comp.
C8	.05	400	PC-5	P488-05	GT4S5		ST-4-05	TM-15	Phono Isolation
C9	.01	600	PC-7	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C10	500		MC-5	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AF Plate Bypass
C11	.01	600	PC-7	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C12	.01	600	PC-7	"	"	"	"	"	Output Plate Bypass
C13	.05	400	PC-2	P488-05	GT4S5		ST-4-05	TM-15	Rect. Bypass
C14	.05	400	PC-2	"	"		"	"	Tone Comp.

CONTROLS

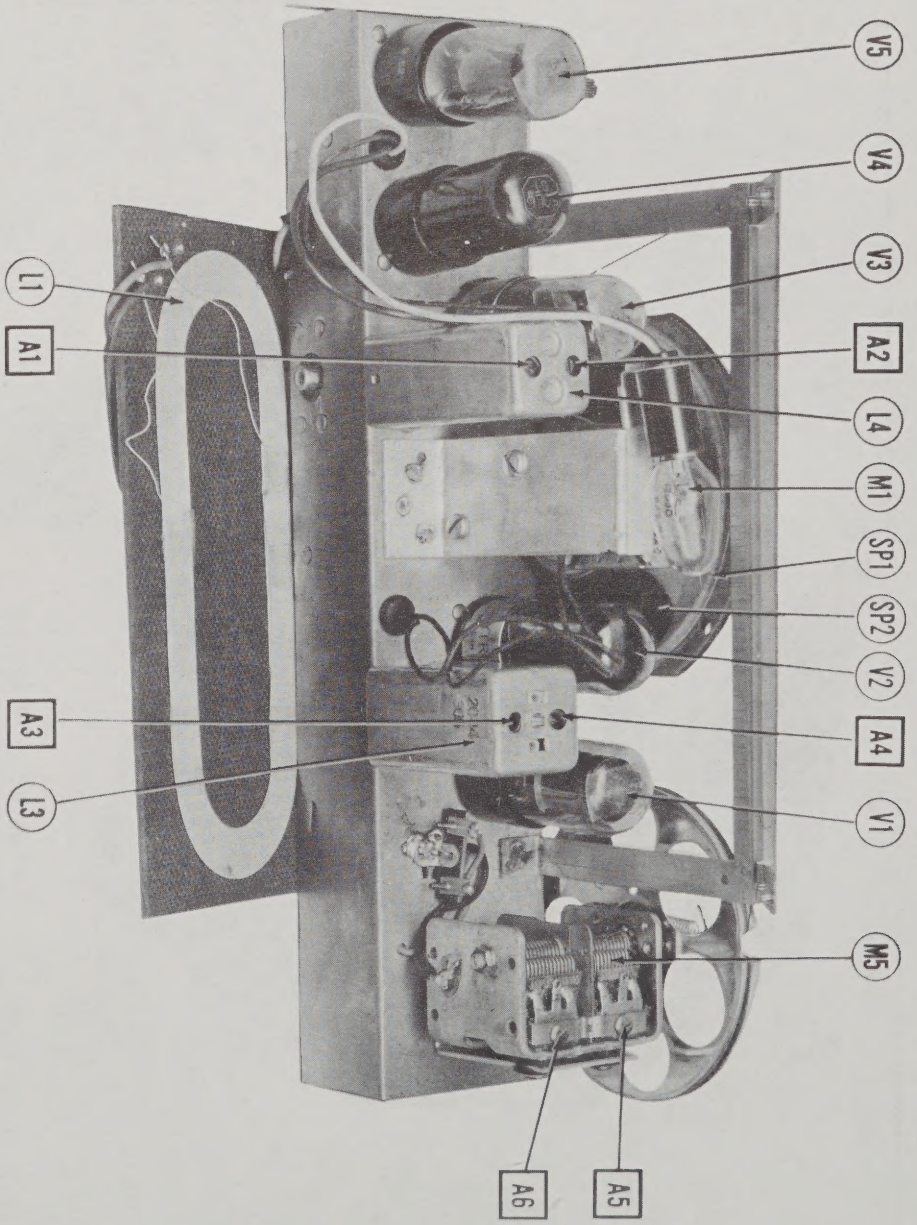
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	VC-4	D13-137	AM-63-Z	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to R1A Per Instructions
C	Switch		" "	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES		
R2	220KΩ		IR-20	BTS-220K	Red-Red-Yl	Line isolation	
R3	22KΩ		IR-9	BTS-22K	Red-Red-Or.	Osc. Grid	
R4	47KΩ		IR-10	BTS-47K	Yl.-Vi.-Or.	Bias	
R5	3.3 Meg.		IR-23	BTS-3.3 Meg.	Or.-Or.-Grn.	AVC Network	
R6	47KΩ		IR-10	BTS-47K	Yl-Vi-Or.	Diode Filter	
R7	2.2 Meg.		IR-13	BTS-2.2 Meg.	Red-Red-Grn.	AF Grid	
R8	470KΩ		IR-11	BTS-470K	Yl-Vi-Yl	" Plate	
R9	470KΩ		IR-11	BTS-470K	Yl-Vi-Yl	Output Grid	
R10	2200Ω		IR-15	BTS-2200	Red-Red-Red	Tone Compensation	
R11	470Ω		IR-1	BTS-470	Yl-Vi-Br	Filter	
R12	1000Ω	1	IR-42	BTA-1000	Br-Blk-Red	"	
R13	33Ω		IR-17		Or-Or-Blk	Surge Limiter	
R14	33Ω		IR-17		Or-Or-Blk	Rectifier Ballast	
R15	220KΩ		IR-20	BTS-220K	Red-Red-Yl	Phono Tone Compensation	Note
R16	1 Meg.		IR-12	BTS-1 Meg.	Br-Blk-Grn.	" " "	

Note. Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD PM	V. C. IMP. 3.5Ω	SPK-12	ST-105 MOD. P5-X#	4A1#	#Drill and Tap Magnet Frame and Remount Output XFMR.
SP2	CONE DIA. 4 5/8"	V. C. DIA. 9/16"				

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2800Ω	3.5Ω	226Ω TAP @ 6Ω	.7Ω	Part of SPK-12	A-3330 *	RO-3 *	A-3031 *	*Bend Mounting Taps Dow and Mount on Original Bracket.

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	MEISSNER PART No.
L1	Loop Ant.	2Ω		LL-17	
2	Osc. Coil	.8Ω	6.5Ω	LO-14	14-1060
3	Input IF	30Ω	30Ω	LI-6	16-6658
4	Output IF	25Ω	25Ω	LI-7	16-6660

DIAL LIGHTS

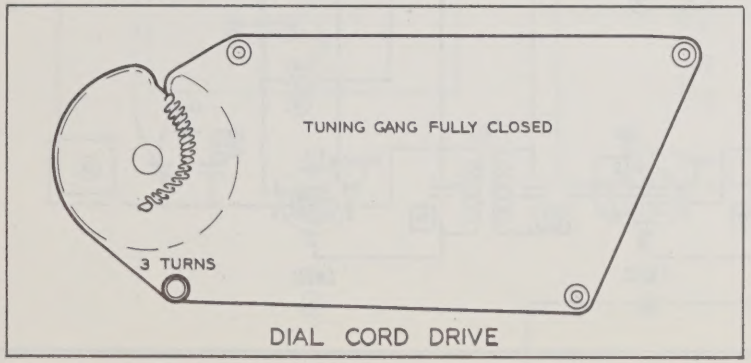
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIRCASTLE PART No.		NOTES
M1	Screw	110V			PB-2		110V-7W

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: AIRCASTLE PART No.	ASTATIC PART No.	REMARKS
M2		QT-3J	

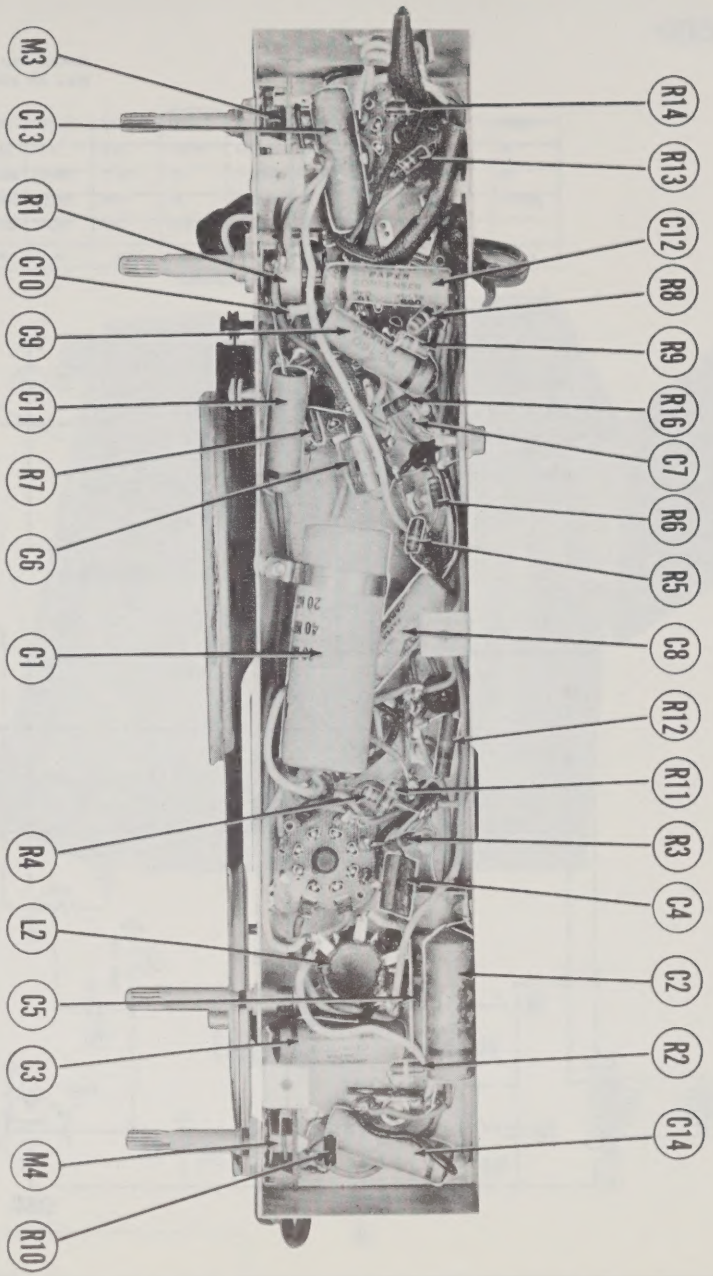
MISCELLANEOUS

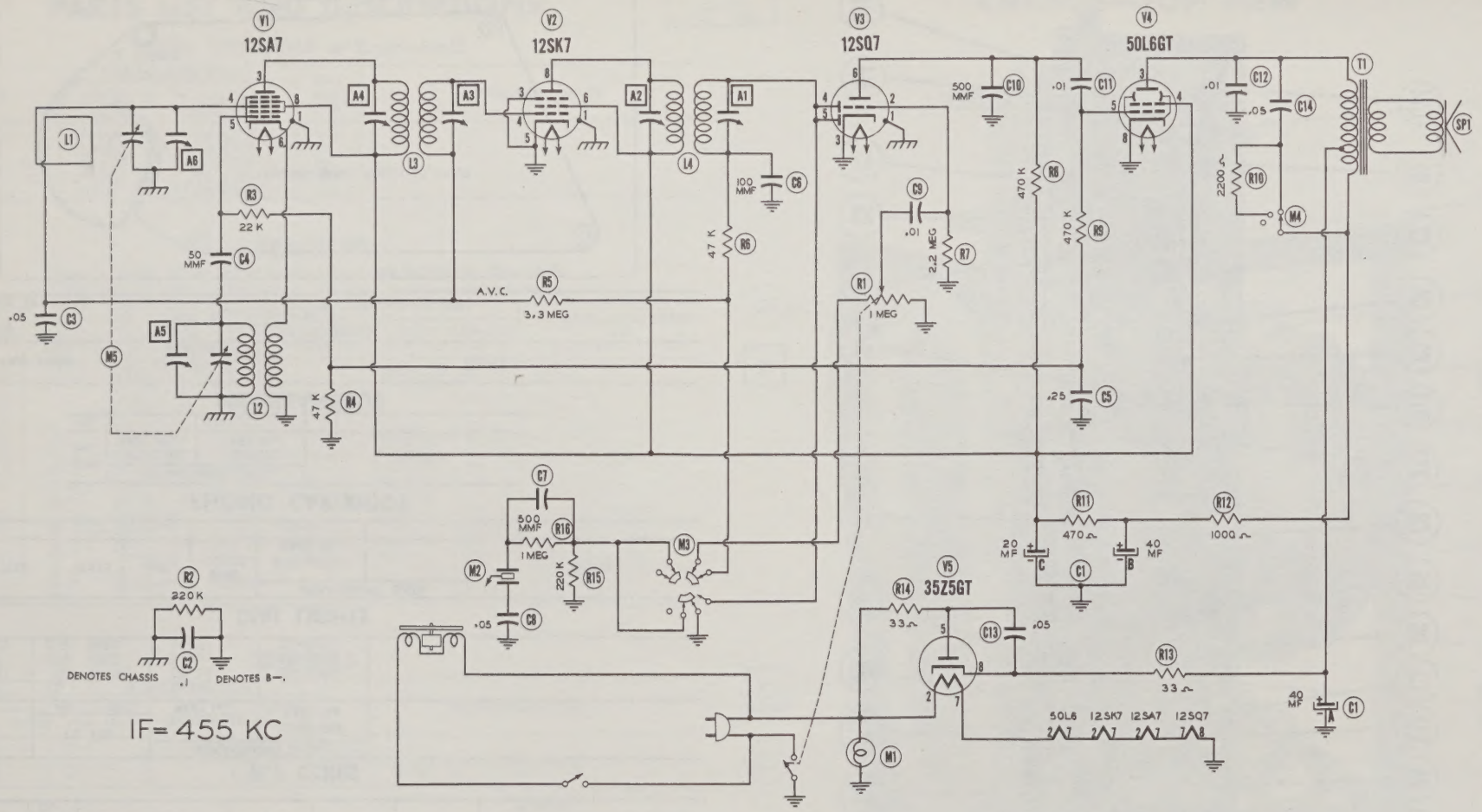
ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
M3	Switch	SW-1	Radio-Phono.
M4	"	SW-2	Tone
M5	2 Gang Var. Cap.	GC-5	(27-461 MMF, 29-191MMF)



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW





IF= 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7GT	0V	25VAC	83VDC	83VDC	§-7.4VDC	0V	12VAC	-.6VDC
V 2	12SK7GT	0V	36VAC	0V	-.6VDC	0V	83VDC	25VAC	83VDC
V 3	12SQ7GT	0V	-.8VDC	0V	-.8VDC	-.8VDC	34VDC	12VAC	0V
V 4	50L6GT	0V	82VAC	108VDC	83VDC	-1.4VDC	-4.8VDC	36VAC	0V
V 5	35Z5GT	0V	117VAC	110VDC	0V	116VAC	117VDC	82VAC	118VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7GT	220KΩ	23Ω	*1500Ω	*1500Ω	65KΩ	.8Ω	12Ω	
V 2	12SK7GT	220KΩ	36Ω	0Ω	3.5 Meg	0Ω	*1500Ω	23Ω	*1500Ω
V 3	12SQ7GT	220KΩ	2 Meg.	0Ω	1 Meg.	1 Meg.	*470KΩ	12Ω	0Ω
V 4	50L6GT	Inf.	67Ω	*240Ω	*1500Ω	470KΩ	45KΩ	36Ω	0Ω
V 5	35Z5GT	Inf.	80Ω	80Ω	Inf.	110Ω	200KΩ	67Ω	200KΩ

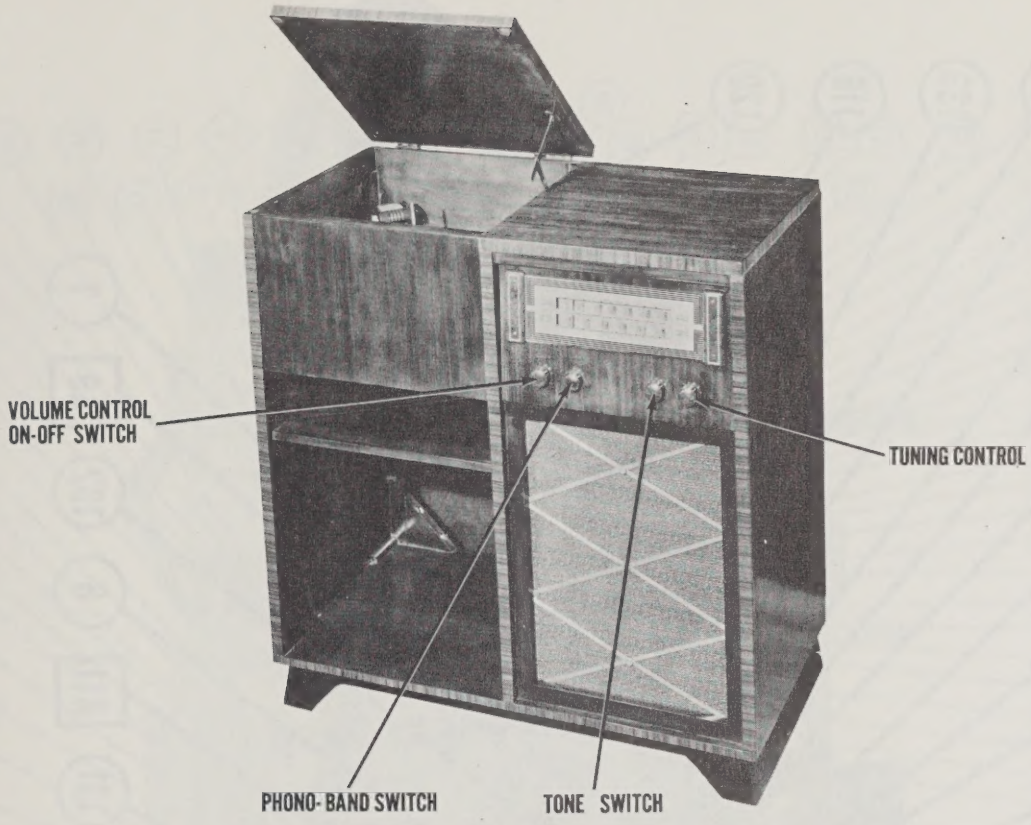
* Measured from pin 8 of V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



AIRCASTLE MODEL 121124

TRADE NAME	Aircastle, Model 121124
SUPPLIER	Spiegel, Inc., 1061 W. 35th St. Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(TEN)	Types, 12BA6 FM RF Amp., 12BE6 FM Converter, 12BE6 AM Converter, 12BA6 AM IF Amp., 12BA6 FM 1st IF Amp., 12BA6 FM 2nd IF Amp., 12BA6 FM 3rd IF Amp., 6AL5 FM Detector, 12AT6 AM DET-AVC-AF, 50L6GT Power Output.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE-BROADCAST	540-1600KC FREQ. MOD. 88-108MC

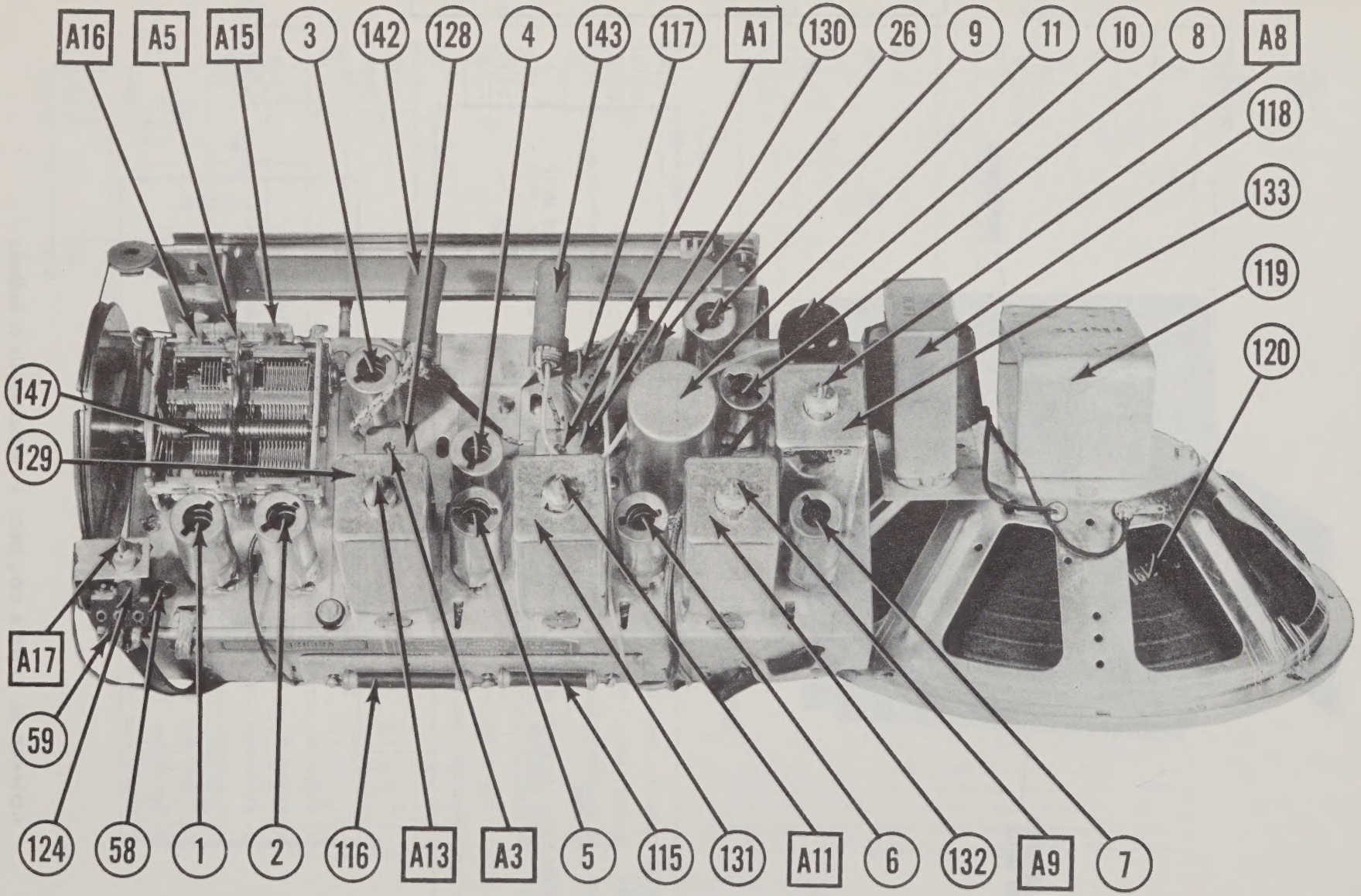
DISASSEMBLY INSTRUCTIONS

1. Remove six screws holding back cover. Remove back cover.
2. Remove AM and FM leads from AM loop and FM terminal on back cover.
3. Disconnect pick-up and motor leads by removing solderless connectors.
4. Disconnect speaker leads by removing solderless connectors.
5. Remove four hex type nuts holding speaker. Remove speaker.
6. Remove four push-on type control knobs.
7. Remove four screws holding chassis. Remove chassis.

AIRCASTLE
MODEL 121124

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


A16
A5
A15
3
142
128
4
143
117
A1
130
26
9
11
10
8
A8
118
133
119
120
147
129
A17
59
124
58
1
2
116
A13
A3
5
115
131
A11
6
132
A9
7

68
31
14
40
39
94
71
72
B
37
91
30
A10
90
36
134
92
A7
93
95
96
110
15
38
34
15
108
111
22
105
109
16
107
35
75
C
28
106
60
98
97
29
41
137
A
104
144
114
112
19
13
89
20
A4
147
42
103
27
113
102
18
17
146
101
99
61
145
62
33
100
46
25
126
12
80
49
52
127
53
141
138
56
125
55
54
78
51
76
57
77
24
79
64
63
139
69
82
81
48
50
135
136
A2
A14
47
86
32
83
65
23
140
66
45
74
44
43
87
84
85
A12
21
67
88
73

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIRCASTLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	12BA6	12BA6	7BK	
2	FM Conv.	12BE6	12BE6	7CH	
3	AM Conv.	12BE6	12BE6	7CH	
4	AM IF Amp.	12BA6	12BA6	7BK	
5	FM 1st IF Amp.	12BA6	12BA6	7BK	
6	FM 2nd IF Amp.	12BA6	12BA6	7BK	
7	FM 3rd IF Amp.	12BA6	12BA6	7BK	
8	FM Detector	6AL5	6AL5	6BT	
9	AM Det.-AVC-AF	12AT6	12AT6	7BT	
10	Power Output	50L6GT	50L6GT	7AC	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11A	40	350		AF88J	UP4445		DY-2x40-450	EL-240	■ Filter -See Note
B	20	450		PRS450/20	BR2045		M-20-450	UT-20	▲ Filter
C	40	250							▲ "
12	60	150	A18-285	PRS150-50	EZ3315*		M-50-150	UT-501	Voltage Doubler
13	4	150	A18-273	PRS150-4	BR415		M-4-450	UT-41	Stabalizing Cap.
14	.05	400	A16-158	484-05	GT4S5		ST-4-05	TC-15	Line Filter
15	.005	1000		684-005	GT6D5		ST-6-005	TC-25	Output Plate Bypass
16	.005	600	A16-153	684-005	GT6D5	GP2M-005	ST-6-005	TC-25	Audio Coupling
17	.01	1000		684-01	GT6S1		ST-6-01	TC-11	Tone Compensation
18	.05	400	A16-158	484-05	GT4S5		ST-4-05	TC-15	" "
19	.01	200	A16-165	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	RF Bypass Pwr. Supply
20	.01	200	A16-165	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	Audio Coupling
21	.01	400	A16-156	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	RF Bypass Pwr. Supply
22	.02	400	A16-150	484-02	GT4S2		ST-4-02	TC-12	Tone Compensation
23	.01	200	A16-165	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	RF Bypass Pwr. Supply
24	.1	200	A16-157	484-.1	GT2P1		ST-2-1	TC-1	AVC Filter
25	.01	400	A16-156	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	RF Bypass Pwr. Supply
26	.02	400	A16-150	484-02	GT4S2		ST-4-02	TC-12	Changer Base Iso.
27	.05	400	A16-158	484-05	GT4S5		ST-4-05	TC-15	AVC Filter
28	.002	200	A16-178	484-002	GT6D2	GP2M-002	ST-6-002	TC-22	Audio Coupling
29	.003	200	A16-180	484-003	GT6D3	GP2M-003	ST-6-003	TC-23	De-emphasis
30	.01	120	A16-163	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	3rd IF Cathode Bypass
31	.01	120	A16-163	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	2nd IF Cathode Bypass
32	.01	120	A16-163	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	1st IF Cathode Bypass
33	100	300	A15-190	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
34	250	300		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	RF Bypass
35	100	300	A15-196	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass
36	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Plate Decoup.
37	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Screen Byp.
38	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AF Plate Decoupling
39	470	500	A15-200	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	3rd IF Grid Filter
40	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Plate Decoup.
41	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
42	250	500	A15-176	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AM Diode RF Filter
43	470	500	A15-200	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AVC Filter
44	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Plate Decoup.
45	5000	300	A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Screen Bypass
46	50	300	A15-191	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	AM Osc. Grid Cap.
47	470	500	A15-200	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AVC Filter Silver
48	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	Conv. Plate Decoup.
49	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	Conv. Screen Bypass
50	20	300	A15-193		5R5Q2	NP0K-20	MOS.5-42	MS-42	Fixed Trimmer
51	10	300	A15-197	1469-00001	5R5Q1	GP1K-10	MOS.5-41	MS-41	FM Osc. Grid Cap.
52	50	300	A15-194	1469-00005	5R5Q5	NP0M-50	MOS.5-45	MS-45	Fixed Padder
53	20	300	A15-198	1468-0000 25	5W5Q2	GP1K-25	MO.5-42	1FM-42	RF Coupling
54	20	300	A15-198	1468-0000 25	5W5Q2	GP1K-25	MO.5-42	1FM-42	" "
55	75	300	A15-195	1469-0000 75		NP0M-75			Fixed Padder
56	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	RF Screen Bypass
57	470	500	A15-200	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Cathode Byp. Silver

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
113	15Ω	3	A60-738	AB-15	Br.-Grn.-Blk. Rect. Ballast
114	220KΩ	½	A60-667	BTS-220K	Red-Red-Yl. Series Phono
115			A60-734		Neg. Temp. Co.-See Note
116			A60-735		Neg. Temp. Co. " "

Note-Special compensating res. order replacement from manufacturer.

FILTER CHOKE

ITEM NO.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA: AIRCASTLE PART NO.	STANCOR PART NO.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
117	.11 A.	166Ω	4.5 Henries	A33-225				

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
118	3260Ω	3.6Ω	200Ω	.2Ω	B80-241	A-3825#	RO-302 #	A-2905#	#Drill one new mounting hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIRCASTLE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	VC IMP.		ST-120†		†Replace output transformer to match 6-8Ω voice coil.
119	PM	3.6Ω	C79-358	Mod. P10-S	10A31	
	CONE DIA.	VC DIA.				
120	9½"	1"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: AIRCASTLE PART No.	MEISSNER PART No.
121	Loop Ant.		1.3Ω	S84-166	
122	Loop Load. Coil		2.2Ω	A10-504	
123	FM Dipole		0Ω	SB82-53	
124	FM Ant.Coil	.2Ω	.2Ω	SB10-488	
125	FM RF Coil		0Ω	B10-489	
126	BC Osc.Coil	.9Ω	5.2Ω	B10-491	14-1060
127	FM " "		0Ω	B10-490	
128	AM 1st IF	17.3Ω	20Ω	A10-499	16-6678
129	FM 1st IF	.8Ω	.1Ω	SA10-493	
130	AM 2nd IF	15.8Ω	16.7Ω	A10-500	16-6678
131	FM 2nd IF	.8Ω	.1Ω	SC10-494	
132	FM 3rd IF	.8Ω	.1Ω	SC10-494	
133	FM Ratio Det.	1.5Ω	.3Ω	SC10-492	
134	Fil. Choke		.1Ω	A33-227	
135	" "		.6Ω	A33-226	
136	" "		.6Ω	A33-226	
137	" "		.6Ω	A33-226	
138	" "		.6Ω	A33-226	
139	" "		.6Ω	A33-226	
140	" "		.6Ω	A33-226	
141	RF Plate Choke		.6Ω	A33-226	

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA AIRCASTLE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
58	50	300	A15-194	1469-00005	5R5Q5	GP1K-50	MOS.5-45	MS-45	RF Coupling
59	50	300	A15-194	1469-00005	5R5Q5	GP1K-50	MOS.5-45	MS-45	Dipole Iso.
60	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	Fil. Bypass
61	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
62	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
63	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
64	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
65	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
66	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
67	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
68	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
69	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
70	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
71	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	" "
72	5000	300	A16-177	1467-005	1W5W5	GP2M-005	MW.5-25	1FM-25	" "
73	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	Dial Light Bypass
74	5000	300	A16-177	1467-005	1W5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass

Note-Some models use 40-40/300V, 40/150V, Part #A18-284 in this application.
* Parallel sections to obtain desired capacity.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA AIRCASTLE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
75A	1 Meg.	½	B34-178	D13-137X	AT-109	Volume Control tapped @ 300KΩ
B	Shaft		Not Req.	E	KSS-3	Attach to 75A per instructions
C	Switch		" "	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA AIRCASTLE PART No.	IRC PART No.	IDENTIFICATION CODES
76	1 Meg.	½	A60-668	BTS-1 Meg.	Br.-Blk.-Grn. FM RF Grid
77	68Ω	½	A60-742		Blue-Gray-Blk. FM RF Cathode
78	100Ω	½	A60-743		Br.-Blk.-Br. FM RF Screen
79	22KΩ	½	A60-744	BTS-22K	Red-Red-Or. FM Conv. Grid
80	100Ω	½	A60-743		Br.-Blk.-Br. FM Conv. Screen
81	100Ω	½	A60-743		Br.-Blk.-Br. FM Conv. Plate Decoupling
82	22KΩ	½	A60-744	BTS-22K	Red-Red-Or. FM Osc. Grid
83	68Ω	½	A60-742		Blue-Gray-Blk. FM 1st IF Cathode
84	100Ω	½	A60-743		Br.-Blk.-Br. FM 1st IF Screen
85	100Ω	½	A60-743		Br.-Blk.-Br. FM 1st IF Plate Decoup.
86	100KΩ	½	A60-727	BTS-100K	Br.-Blk.-Yl. AVC Network
87	100KΩ	½	A60-727	BTS-100K	Br.-Blk.-Yl. " "
88	68Ω	½	A60-742		Blue-Gray-Blk. FM 2nd IF Cathode
89	100Ω	½	A60-743		Br.-Blk.-Br. FM 2nd IF Screen
90	100Ω	½	A60-743		Br.-Blk.-Br. FM 2nd IF Plate Decoup.
91	68Ω	½	A60-742		Blue-Gray-Blk. FM 3rd IF Cathode
92	100Ω	½	A60-743		Br.-Blk.-Br. FM 3rd IF Screen
93	100Ω	½	A60-743		Br.-Blk.-Br. FM 3rd IF Plate Decoup.
94	100KΩ	½	A60-727	BTS-100K	Br.-Blk.-Yl. AVC Network
95	270Ω	½	A60-723		Red-Vi.-Br. RF Filter
96	27KΩ	½	A60-745	BTS-27K	Red-Vi.-Or. De-omphasis
97	22KΩ	½	A60-744	BTS-22K	Red-Red-Or. Ratio Det. Diode Load
98	100KΩ	½	A60-727	BTS-100K	Br.-Blk.-Yl. AVC Network
99	1 Meg.	½	A60-668	BTS-1 Meg.	Br.-Blk.-Grn. AM Conv. Grid
100	22KΩ	½	A60-744	BTS-22K	Red-Red-Or. AM Osc. Grid
101	68Ω	½	A60-742	BW-½-68	Blue-Gray-Blk. AM IF Cathode
102	2.2 Meg.	½	A60-726	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
103	470KΩ	½	A60-731	BTS-470K	Yl.-Vi.-Yl. Diode Load
104	2.2 Meg.	½	A60-726	BTS-2.2 Meg.	Red-Red-Grn. Bias
105	33KΩ	½	A60-748	BTS-33K	Or.-Or.-Or. Tone Compensation
106	10 Meg.	½	A60-726	BTS-10 Meg.	Br.-Blk.-Blue AF Grid
107	270KΩ	½	A60-747	BTS-270K	Red-Vi.-Yl. AF Plate Load
108	27KΩ	½	A60-747	BTS-270K	Red-Vi.-Yl. AF Plate Decoup.
109	470KΩ	½	A60-731	BTS-470K	Yl.-Vi.-Yl. Output Grid
110	150Ω	1	A60-741	BW-1-150	Br.-Grn.-Br. Output Cathode
111	27KΩ	2	A60-745	BT-2-27K	Red-Vi.-Or. Bias
112	2000Ω	10	A60-739	AB-2000	Filter

DATE 5/46 499-2 SET #61 FOLDER 2

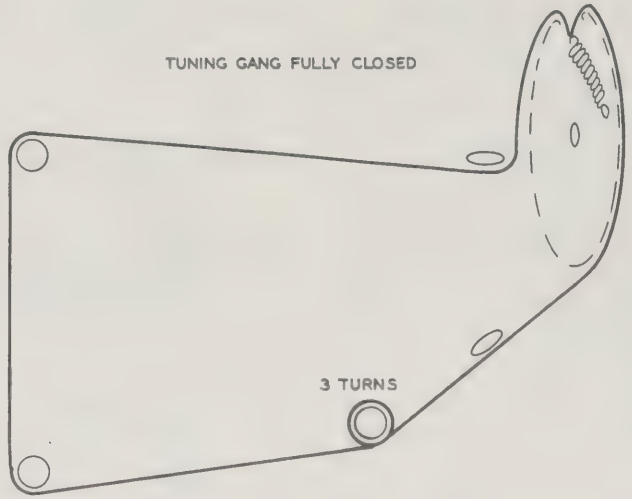
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

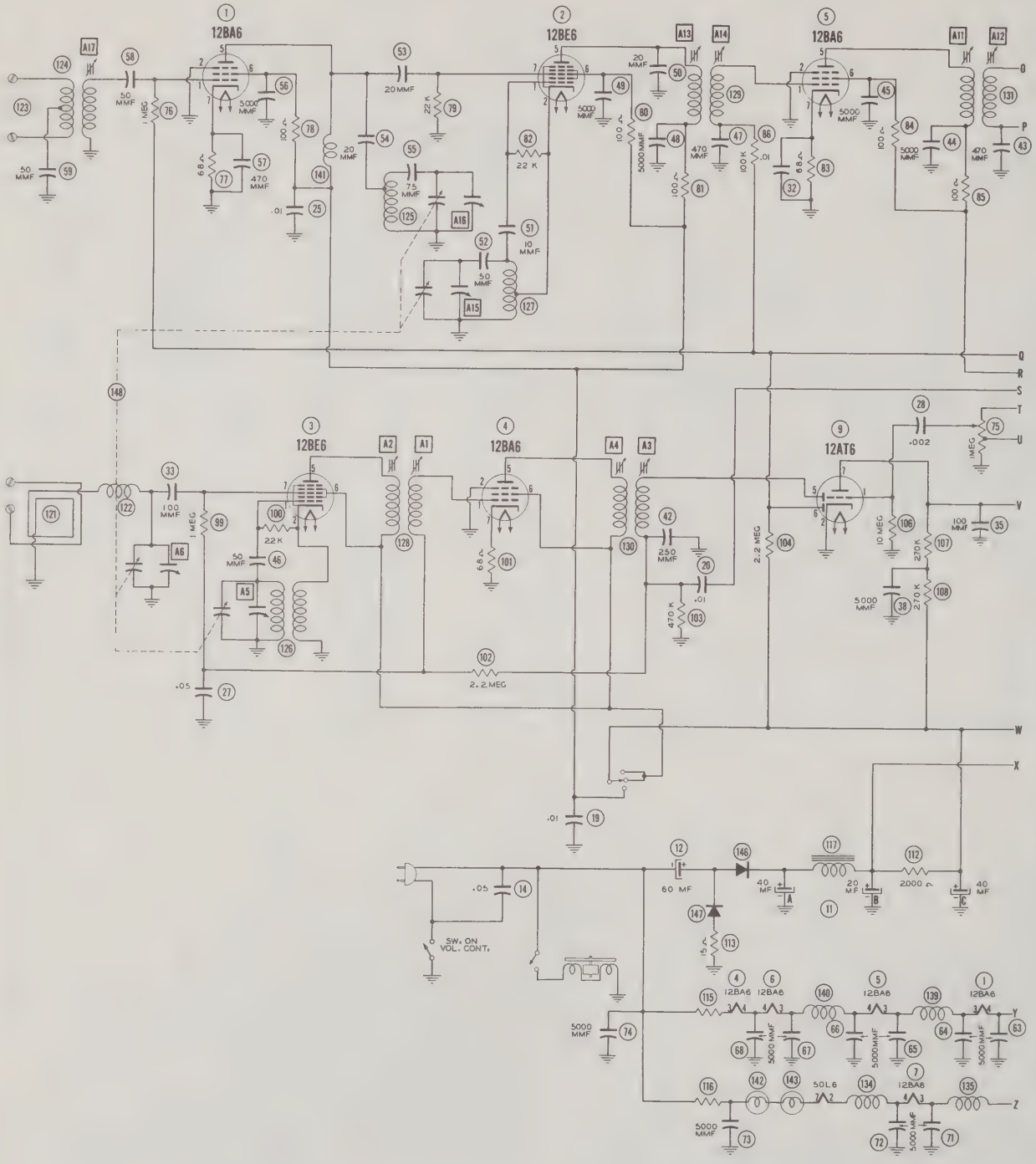
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA AIRCASTLE PART No.		INSTALLATION NOTES
142	Bayonet	6-8	0.15	Brown			Type #47
143	"	"	"	"			" "

MISCELLANEOUS

ITEM No.	PART NAME	AIRCASTLE PART No.	NOTES
144	Switch	A60-178	Band
145	"	A26-125	Tone
146	Rectifier	A83-483	Selenium (150MA)
147	"	A83-483	" "
148	2 Gang Var. Cap	C19-191	
A5	Trimmer Strip	A20-144	AM Osc. Adj.
A15			FM Osc. Adj.
A16			FM RF Adj.
A6	Trimmer	A20-139	AM Ant. Adj.
	Dial Scale	C67-527	
	Dial Pointer	A58-67	
	Knob	A52-263	Tuning
	"	A52-260	Tone
	"	A52-261	On/Off-Volume
	"	A52-262	Ph.-AM-FM

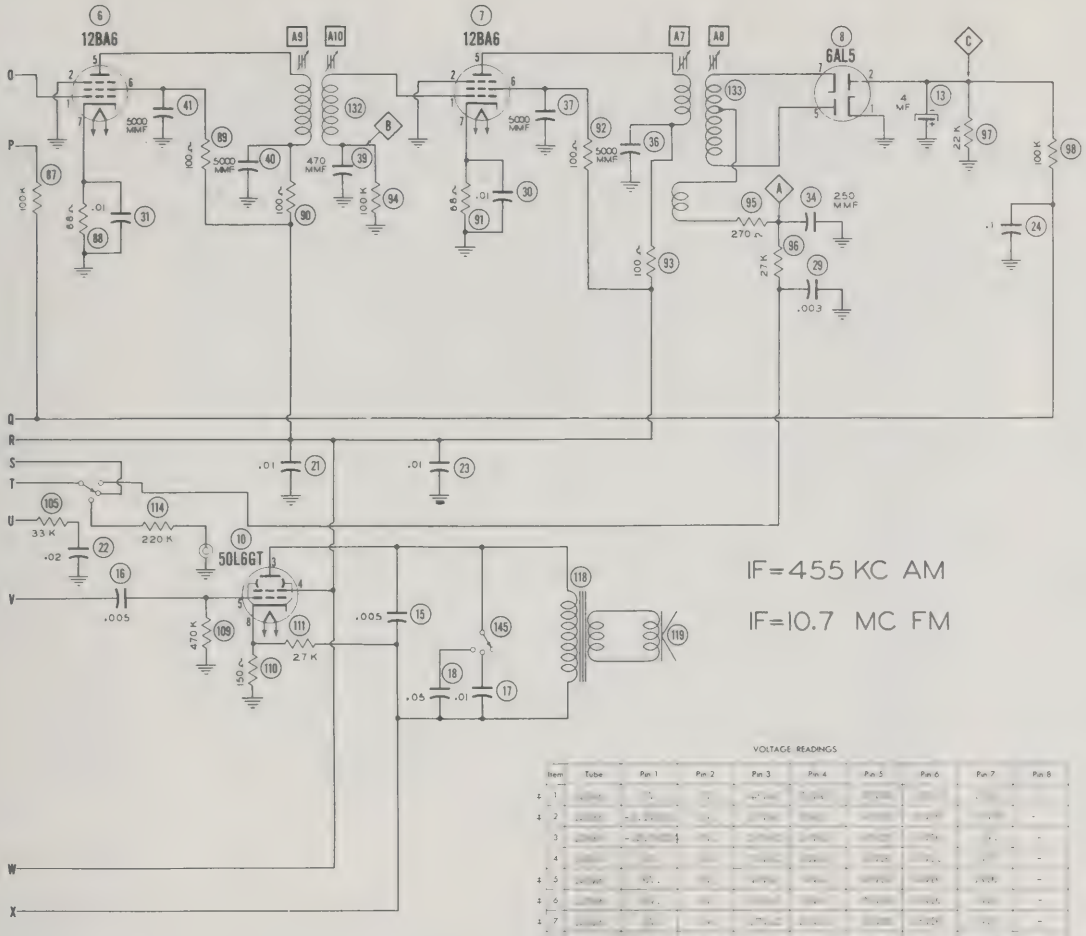


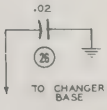
DIAL CORD DRIVE

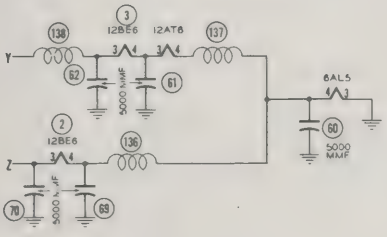


A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949







VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡ 1									-
‡ 2									-
3									-
4									-
‡ 5									-
‡ 6									-
‡ 7									-
‡ 8									-
9				1-VAC					-
10			235VAC	235VDC					-

§TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡ 1							20KΩ		-
‡ 2							30KΩ		-
3			.9Ω	28Ω	12Ω	30KΩ	30KΩ		-
4		2.7 Meg	0Ω	70Ω	60Ω	30KΩ	30KΩ		-
‡ 5		220KΩ	0Ω	40Ω	50Ω	30KΩ	30KΩ		-
‡ 6		220KΩ	0Ω	5Ω	6Ω	30KΩ	30KΩ		-
‡ 7		100KΩ	0Ω	17Ω	26Ω	30KΩ	30KΩ		-
‡ 8						1 Meg.	0Ω		-
9						470KΩ	130KΩ		-
10		1Meg.	28Ω	30KΩ	30KΩ	470KΩ	240KΩ		-

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

© Howard W. Sams & Co., Inc. 1949

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with side of signal generator and chassis.

Use insulated alignment screwdriver for all adjustments

AM ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD.	High side to Pin 7 (grid) of 12BE6 AM Conv. Tube (7). Low side to chassis.	455KC	BC (Clock-wise)	Tuning cap. fully open.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2	250MMFD	"	1600KC	"	"	"	A5	Adjust for maximum output
3	250MMFD	High side to either dipole terminal. Low side to chassis.	1400KC	"	Tune for maximum output.	"	A6	" " " "

FM ALIGNMENT USING FM SIGNAL GENERATOR, OSCILLOSCOPE & OUTPUT METER

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep with exception of RF alignment Steps 7, 8 & 9 where 400 ∿ modulation with 45KC sweep is used. Connect the synchronized sweep voltage from the sig. gen. to the horizontal input of scope. The horizontal sweep voltage may be taken from the power line if the sig. gen. does not have a sync. voltage output. There may be some phase shift encountered between sig. gen. and scope horizontal sweep. If provision is made for this in the scope rotate phase control until the two curves coincide. If no provision is made for this the same thing may be accomplished by inserting a cap. of suitable value (.01 to .1 MFD) in series with the horizontal sync. input.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
4	.1 MFD.	High side to Pin 1 (grid) of 12BA6 2nd FM IF Tube (4). Low side to chassis.	10.7MC (Freq. Mod.)	FM (Counter-Clockwise)	Tuning cap. fully open.	Vertical input to Point A. Ground to chassis.	A7,A8	Alternately adjust A7 for maximum amplitude and A8 for maximum linearity of "S" curve with curve centered on horizontal scope sweep line per Fig. 1.
5	.1 MFD.	High side to Pin 1 (grid) of 12BA6 FM RF Tube (1). Low side to chassis.	"	"	"	Vertical input to Point B. Ground to chassis.	A9,A10 A11,A12	Connect short from junction of cap. (24) and resistor (98) to chassis. Adjust for maximum amplitude and symmetry of pattern per Fig. 2 with pattern centered on horizontal scope sweep line.
6	.1 MFD.	High side to Pin 5 (plate) of 12BA6 FM RF Tube (1). Low side to chassis.	"	"	"	"	A13, A14	Adjust for maximum amplitude and symmetry of pattern per Fig. 3 with pattern centered on horizontal scope sweep line. Remove short from junction of resistor (98) and cap. (24) to chassis.
						OUTPUT METER		
7	2 -150Ω carbon res.	Each side in series with 150Ω resistor across dipole ant. terminals.	108MC (Freq. Modulated 400 ∿ mod. 45KC sweep)	FM	Tuning cap. fully open.	Across voice coil	A15	Adjust for maximum output
8	"	"	103MC	"	Tune for maximum output.	"	A16	" " " "
9	"	"	100MC	"	"	"	A17	" " " "

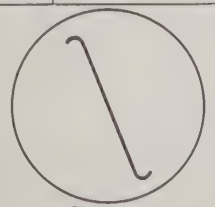


FIG. 1

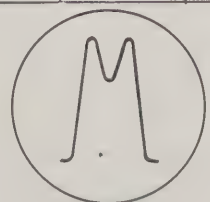


FIG. 2

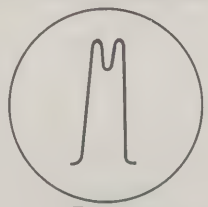


FIG. 3

FM ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

For plotting discriminator curve, vary sig. gen. 100KC above and below 10.7MC in Steps of 20KC. Record readings of VTVM for each setting of sig. gen. and plot curve. If curve is not similar to Fig. 1 repeat adjustment of A7 and A8 and replot curve.

For plotting IF curve, vary sig. gen. 150KC above and below 10.7MC in Steps of 20KC. Record readings of VTVM for each setting of sig. gen. and plot curve. If curve is not similar to Fig. 2 or Fig. 3 repeat last adjustments and replot curve.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4	.1 MFD.	High side to Pin 1 (grid) of 12BA6 3rd FM IF Tube (5). Low side to chassis.	10.7MC (Unmodulated)	FM	Tuning cap. fully open.	DC probe to Point A. Common to chassis	A7	Adjust for maximum deflection.
5	.1 MFD.	"	"	"	"	DC probe to Point A. Common to chassis	A8	Adjust for zero deflection. Plot discriminator curve per prealignment instructions. Once curve is satisfactory do not disturb adjustment of A7 or A8.
6	.1 MFD.	High side to Pin 1 (grid) of 12BA6 2nd FM IF Tube (4). Low side to chassis.	"	"	"	DC probe to Point B. Common to chassis	A9,A10	Solder a shunt cap. of 100 MMFD across secondary of 3rd FM IF Transformer (132) and adjust A9 for maximum deflection. Transfer shunting cap. to primary of the same transformer and adjust A10 for maximum deflection. Plot IF curve per prealignment instructions Once curve is satisfactory do not disturb adjustment of A9 or A10. Remove shunt cap.
7	.1 MFD.	High side to Pin 1 (grid) of 12BA6 1st FM IF Tube (3). Low side to chassis.	"	"	"	"	A11, A12	Solder a shunt cap. of 100 MMFD across secondary of 2nd FM IF Transformer (131) and adjust A11 for maximum deflection. Transfer shunting cap. to primary of the same transformer and adjust A12 for maximum deflection. Plot IF curve per prealignment instructions. Once curve is satisfactory do not disturb adjustment of A11 or A12. Remove shunt cap.
8	.1 MFD.	High side to Pin 5 (plate) of 12BA6 FM RF Tube (1). Low side to chassis.	"	"	"	"	A13, A14	Solder a shunt cap. of 100 MMFD across secondary of 1st FM IF Transformer (129) and adjust A13 for maximum deflection. Transfer shunting cap. to primary of the same transformer and adjust A14 for maximum deflection. Plot IF curve per prealignment instruction. Once curve is satisfactory do not disturb adjustment of A13 and A14. Remove shunt cap.
9	2 -150Ω carbon res.	Each side in series with 150Ω resistor across dipole ant. terminals.	108MC (Unmodulated)	FM	Tuning cap. fully open.	DC probe to Point B. Common to chassis	A15	Adjust for maximum deflection.
10	"	"	103MC	"	Tune for maximum deflection.	"	A16	Rock tuning cap. and adjust for maximum deflection.
11	"	"	100MC	"	"	"	A17	Adjust for maximum deflection.

BENDIX MODEL 687A

TRADE NAME	Bendix, Model 687A
MANUFACTURER	Bendix Radio Div., of Bendix Aviation Corp., Baltimore, Maryland
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types 1T4 IF Amp., 1R5 Converter, 1T4 IF Amp., 1S5 DET-AVC-AF, 3Q4 Power Output 117Z3 Rectifier
POWER SUPPLY RATING	105-125 Volts AC-DC or 9 Volts "A" Supply, and 90 Volts "B" Supply in Pack Form .16 Amp., @ 117 Volts AC or 70MA @ 9 Volts DC and 16.5MA @ 90 Volts DC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .1 MFD capacitor in series with low side of the signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	Across Antenna Loading Coil (L2)	455KC	Tuning cap fully open.	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200MMF to reduce hum modulation.
2.	50MMF	"	1475KC	1475KC	"	A5, A6 A7	Adjust for maximum output. Check calibration at 965KC and 580KC. If necessary, bend Osc. and Ant. section plates of gang cap. for correct tracking.

BENDIX MODEL 687A
BATTERY-LINE OPERATED

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-3 SET #61 FOLDER 3

PARTS LIST AND DESCRIPTIONS

BENDIX
MODEL 687A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	1T4	1T4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amp.	1T4	1T4	6AR	
V4	DET-AVC-AF	1S5	1S5	6AU	
V5	Power Output	3Q4	3Q4	7BA	
V6	Rectifier	11Z3	11Z3	4BR	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CA.	RATING: VOLT	REPLACEMENT DATA: BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	CE3E00	PRSA302010	EDL4215		DSB-5030-150	TA-240	Red Filter
B	20	150			BRH251		M-100-25	UHC-102	Blue Filter
C	100	25							Green Output Fil. Byp.
C2	25	25	CE1T00	PRS25/25	BR252A		M-25-25	TA-25	" " "
C3	.002	200	CP2T12	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Ext. Ant. Isolation
C4	.1	200	CP4T51	P288-1	GT2P1		ST-2-1	TM-1	Line Isolation
C5	3.3		CC9A16			NPOK-3			RF Coupling
C6	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C7	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	RF Bypass
C8	22	500	CM5A05		5R5Q2	NPOK-20	MOS.5-42	MS-42	Fixed Trimmer
C9	3.3		CC9A16			NPOK-3			RF Coupling
C10	100	500	CM5A22	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	" "
C11	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	RF Fil. Bypass
C12	4.7			1469-00000	5R5V5	NPOK-5	MOS.5-55	MS-55	Fixed Trimmer Note
C13	47	500	CM5A14	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap.
C14	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	Filament Bypass
C15	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	RF Bypass
C16	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	IF Plate Decoup.
C17	.005	600	CP2T12	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C18	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	AF Screen Bypass
C19	100	500	CM5A22	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass
C20	560	500	CM5A40	1468-0005	1W5T6	GP2K-500	MO.5-36	1FM-35	Audio Coupling
C21	.05	200	CP2T40	P288-05	GT2S5		ST-4-05	TM-15	AF Plate Decoup.
C22	.005	600	CP2T20	P688-005	GT6D5		ST-6-005	TM-25	Output Plate Bypass
C23	.0005	600	CP4T05	1468-0005	GT6T5	GP2K500	ST-6-0005	TC-35	Tone Comp.
C24	.05	200	CP2T40	P288-05	GT2S5		MPH-4-05	TM-15	Line Filter

Note. Not used in all models.

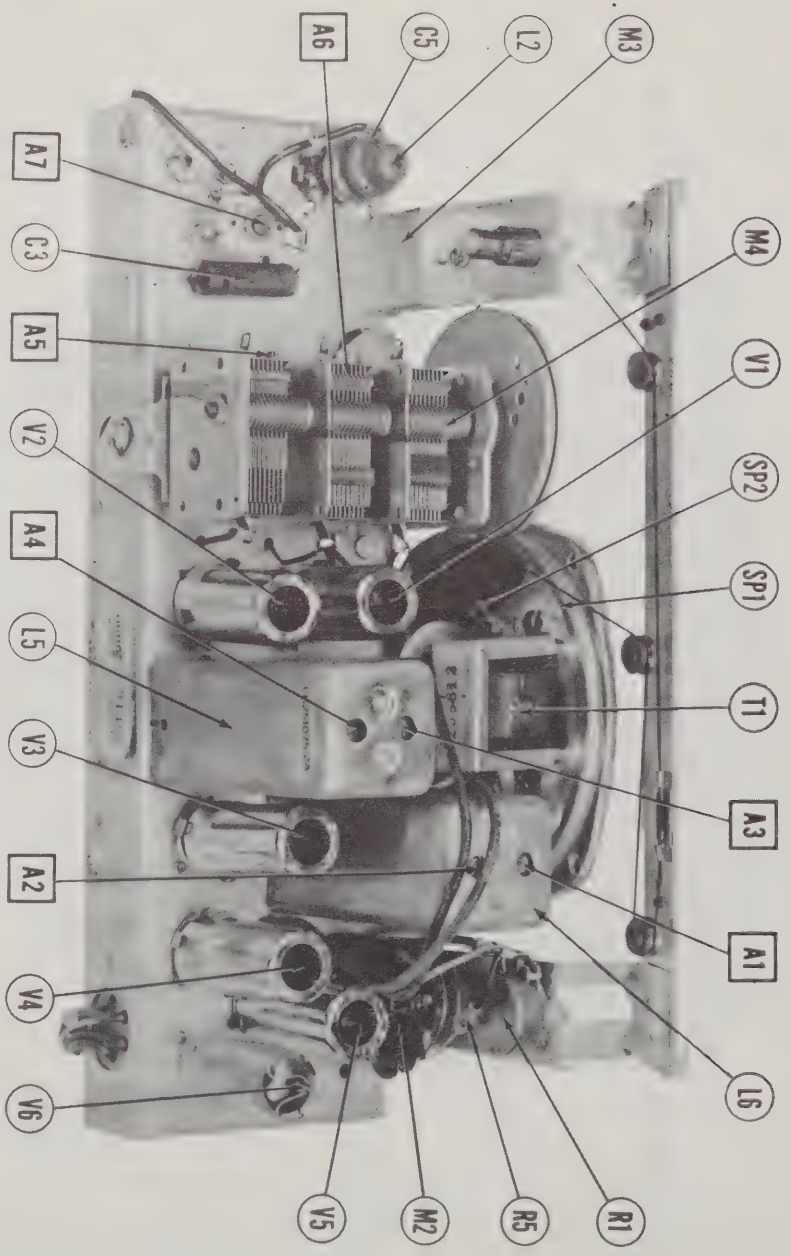
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BENDIX PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	RV4S05	D13-137	M-63-Z	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BENDIX PART No.	IRC PART No.	IDENTIFICATION CODES	
R2	470KΩ	½	RC1H58	BTS-470K	Yl.-V1.-Yl.	RF Grid
R3	12KΩ	½	RC1G37	BTS-12K	Br.-Red-Or.	Screen Dropping
R4	4.7 Meg.	½	RC1H70	BTS-4.7 Meg.	Yl.-V1.-Grn.	RF Filament
R5	2.2 Meg.	½	RC1H66	BTS-2.2 Meg.	Red-Red-Grn.	AVC Network
R6	100KΩ	½	RC1H51	BTS-100K	Br.-Blk.-Yl.	Osc. Grid
R7	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn.	Converter Grid
R8	6800Ω	½	RC1H34	BTS-6800	Blue-Gray-Red	IF Decoupling
R9	4.7 Meg.	½	RC1H70	BTS-4.7 Meg.	Yl.-V1.-Grn.	AF Grid
R10	4.7 Meg.	½	RC1H70	BTS-4.7 Meg.	Yl.-V1.-Grn.	AF Screen
R11	1 Meg.	½	RC1H62	BTS-1 Meg.	Br.-Blk.-Grn.	AF Plate
R12	220KΩ	½	RC1H54	BTS-220K	Red-Red-Yl.	AF Plate Decoupling
R13	2.2 Meg.	½	RC1H66	BTS-2.2 Meg.	Red-Red-Grn.	Output Grid
R14	270Ω	½	RC1G20	BW-½-270	Red-V1.-Br.	Filament String
R15	470Ω	1	RC1H20	BTA-470	Yl.-V1.-Br.	" "
R16	100Ω	1	RC3H12	BW-1-100	Br.-Blk.-Br.	Filament Surge Limiter
R17	47Ω	1	RC3H08		Yl.-V1.-Blk.	Surge Limiter
R18	2200Ω	10	RW0D00	AB-2250		Filament Dropping
R19	1000Ω	1	RC3H24	BTA-1000	Br.-Blk.-Red	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BENDIX PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	10KΩ	3.1Ω	330Ω	.7Ω	TA0004	A-3879	RO-16 †	A-2932	† Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BENDIX PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	SP5R00	ST-105 MOD. P5-X**	4A07	* Drill and tap magnet frame.
	PM	3.1Ω				
SP2	CONE DIA.	V. C. DIA.				
	4 1/2"	9/16"				

R F COILS

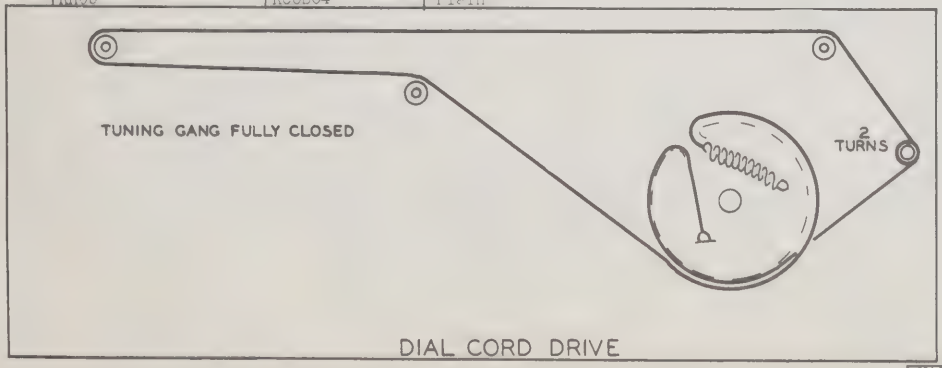
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	BENDIX PART No.	MEISSNER PART No.
L1	Loop Ant.	0Ω		AL0Z13	
L2	Ant. Loading Coil	36Ω	1Ω	TR6L05	
L3	RF Coil	65Ω	3.5Ω	TR6L03	
L4	Osc. Coil	4Ω	7.5Ω	L06B02	
L5	Input IF	17Ω	17Ω	T10C03	
L6	Output IF	17Ω		T10D04	

BATTERIES

ITEM No.	VOLTAGE	BENDIX PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	9V"A" 90V"B"	AB200			754			G6M60	

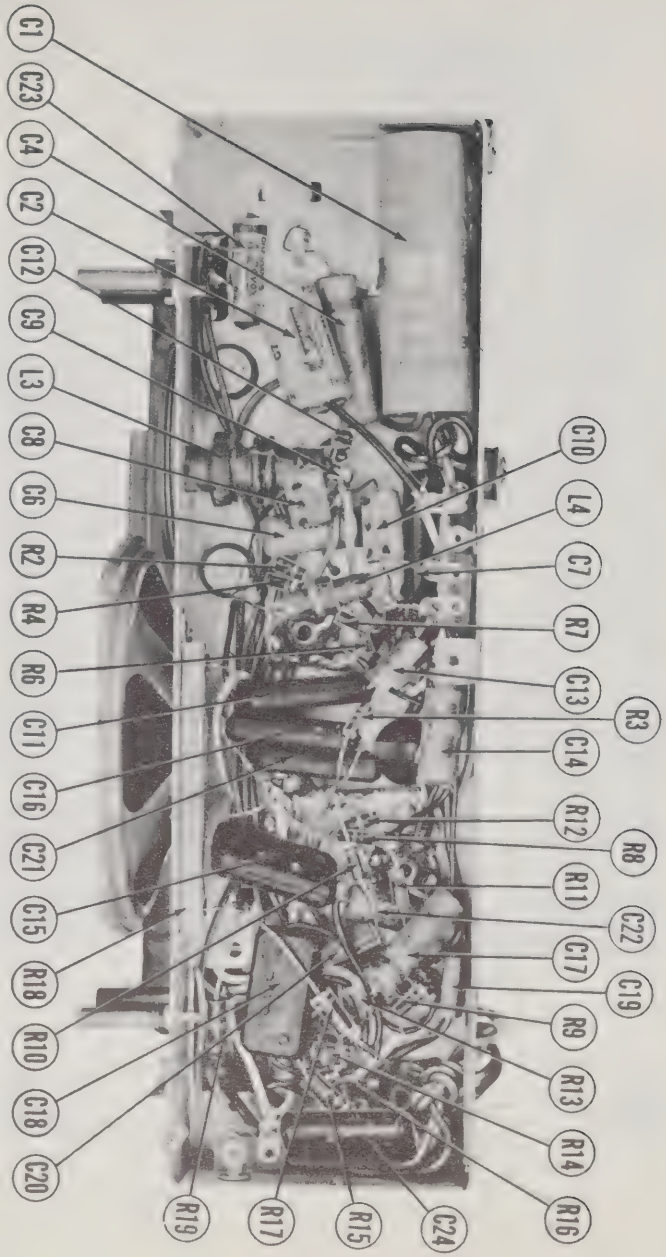
MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Switch	SR3B00	Power
M3	Switch	SR2A00	Tone
M4	3 Gang Var. Cap.	CV0C02	(30-496MMF, 30-469MMF, 30-220MMF)
	Dial Scale	DS0A09	
	Dial Pointer	ID0M08	
	Cabinet	ZW6P00	
	Knob	KB0B00	Index
	Knob	KC0B04	Plain



DIAL CORD DRIVE

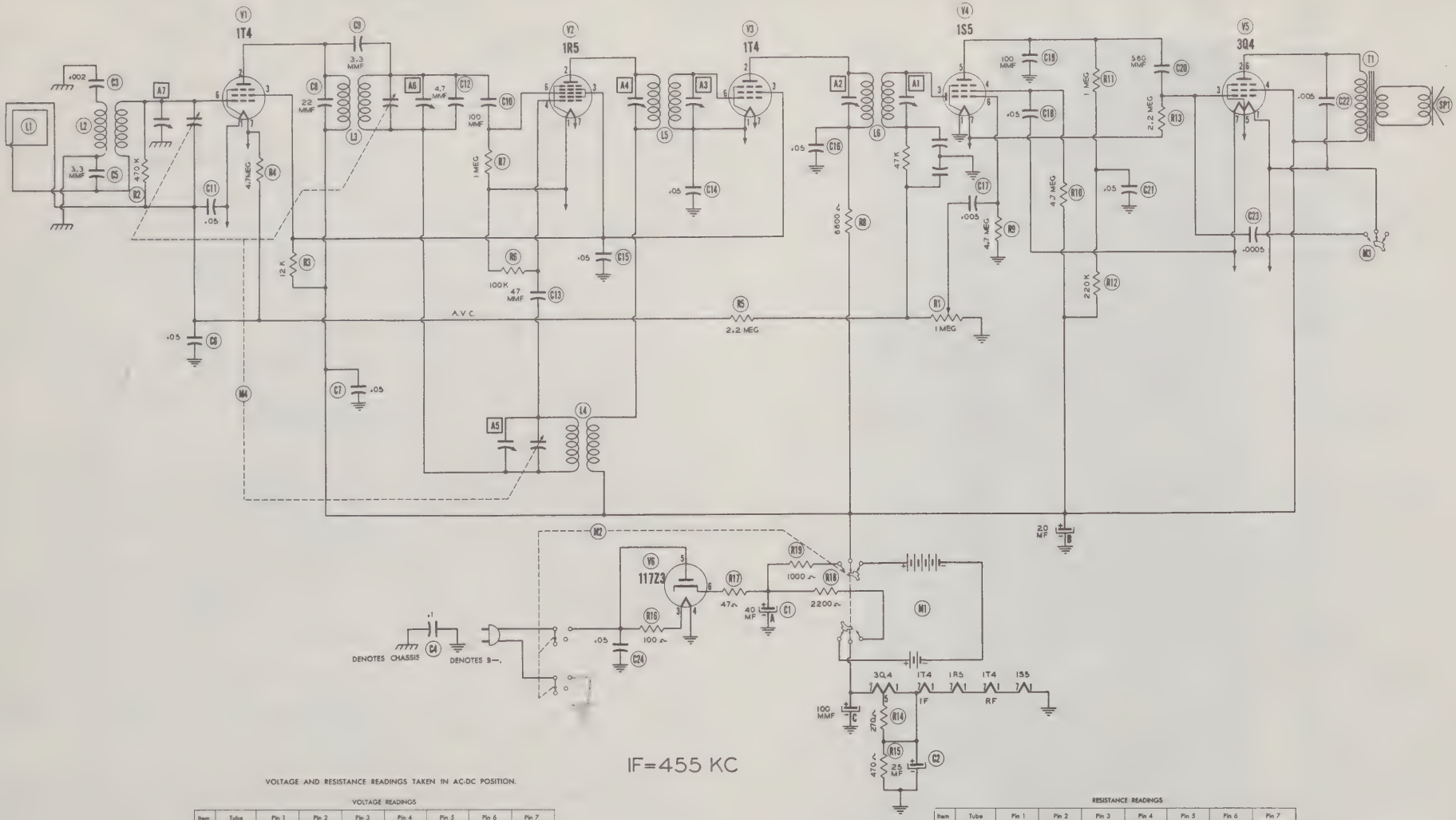
CHASSIS—BOTTOM VIEW



DATE 5/49 499-3 SET #61 FOLDER 3

BENDIX MODEL 687A

BENDIX MODEL 687A



VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1T4	1.4VDC	95VDC	50VDC	95VDC	1.4VDC	.1VDC	0.9VDC
V 2	1R5	2.8VDC	95VDC	50VDC	1-1.3VDC	2.8VDC	.5VDC	4.4VDC
V 3	1T4	4.4VDC	80VDC	50VDC	81VDC	4.4VDC	4.4VDC	5.6VDC
V 4	1S5	0V	0V	-.1VDC	14.6VDC	12VDC	0V	1.4VDC
V 5	3Q4	5.8VDC	92VDC	.1VDC	95VDC	7VDC	92VDC	4.3VDC
V 6	117Z3	117VAC	0V	115VAC	0V	117VDC	115V-C	0V

†TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

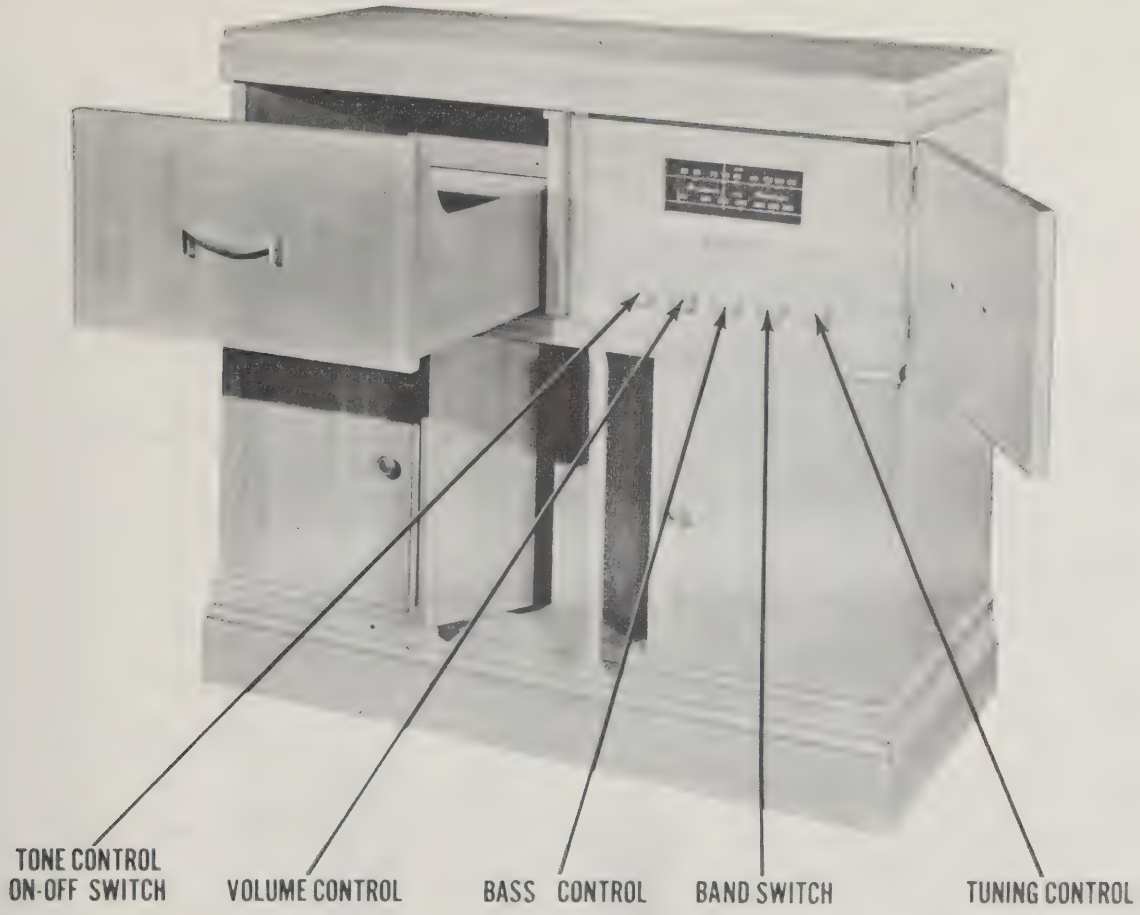
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1T4	•	†1000Ω	†3KΩ	3KΩ	•	2.5Meg.	•
V 2	1R5	•	†1000Ω	†13KΩ	120KΩ	•	1 Meg.	•
V 3	1T4	•	18KΩ	†13KΩ	10KΩ	•	50Ω	•
V 4	1S5	•	300KΩ	1 Meg.	14.7Meg.	†1.2Meg.	4.7Meg.	•
V 5	3Q4	•	†12000	12.2Meg.	†1000Ω	•	†12000	•
V 6	117Z3	650Ω	Inf.	50Ω	0Ω	650Ω	2KΩ	Inf.

† Measured from pin 6 of V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1949

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



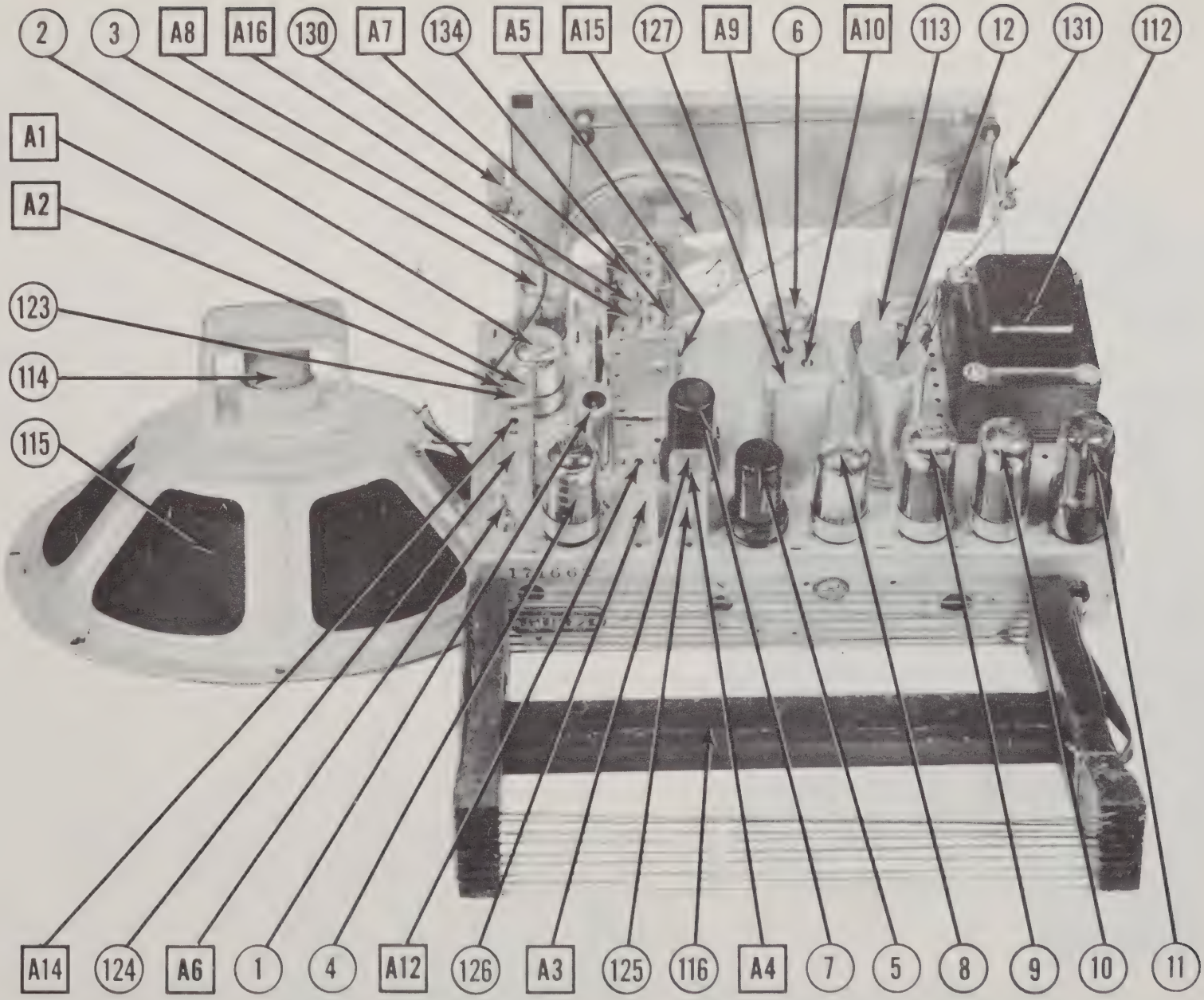
BRUNSWICK MODELS
T-4400, T-4400½

BRUNSWICK MODEL T-4400½

TRADE NAME	Brunswick, Models T-4400, T-4400½
MANUFACTURER	Radio and Televison Inc. 244 Madison Ave. New York 16, New York
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna.
TUBES(ELEVEN)	Types 6BA6 FM RF Amp., 7F8 FM Converter, 7Q7 AM Converter, 7AH7 1st IF Amp., 6SH7 2nd FM IF Amp., 7A6 FM DET., 6SQ7 AM DET-AVC-1st AF, 7F7 2nd AF-Phase Inv., (2) 7C5 Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING .78 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1700KC FREQ. MOD. 88-108MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


2
3
A8
A16
130
A7
134
A5
A15
127
A9
6
A10
113
12
131
112
A1
A2
123
114
115
A14
124
A6
1
4
A12
126
A3
125
116
A4
7
5
8
9
10
11

104
20
13
88
89
15
105
106
16
92
91
A
31
14
B
64
93
24
21
62
35
90
108
25
C
D
79
36
22
63
39
29
32
30
71
133
120
50
53
77
23
122
60
45
54
76
59
121
75
74
28
46
27
70
55
49
47
58
57
68
69
48
67
135
129
128
66
72
65
44
A13
52
51
117
43
80
119
73
56
78
42
81
84
A11
85
83
33
38
82
34
94
95
26
86
37
41
98
40
109
97
96
99
102
101
100
103
17
18
19
107

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	FM RF Amp.	6BA6	6BA6	7BK	
2	FM Converter	7F8	7F8	8BW	
3	AM Converter	7Q7	7Q7	8AL	
4	1st IF Amp.	7AH7	7AH7		
5	FM 2nd IF	6SH7	6SH7	8BK	
6	FM Det.	7A6	7A6	7AJ	
7	AM DET-AVC-1st AF	6SQ7	6SQ7	8Q	
8	2nd AF-Phase Inverter	7F7	7F7	8AC	
9	Power Output	7C5	7C5	6AA	
10	Power Output	7C5	7C5	6AA	
11	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: BRUNSWICK PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
12A	40	450		AF88J	UP4445		DY-2X40-450	EL-240	▲ Filter
B	40	450							▬ Filter
13	8	450		PRS450/8	BR845		M-8-450	UT-8	Decoupling
14	20	25		PRS150/20	BR202A		M-20-150	UT-201	Stabalizing Cap.
15	.025	400		484-03	GT4S3		ST-6-03	TC-13	Line Filter
16	.025	400		484-03	GT4S3		ST-6-03	TC-13	" "
17	.0018	1500		1684-002	GT16D2		STM-16-002	TR-22	Output Plate Bypass
18	.0018	1500		1684-002	GT16D2		STM-16-002	TR-22	" " "
19	.05	400		484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
20	.05	400		484-05	GT4S5		ST-4-05	TC-15	" "
21	.05	200		484-05	GT2S5		ST-4-05	TC-15	" "
22	.05	200		484-05	GT2S5		ST-4-05	TC-15	
23	.02	400		484-02	GT4S2		ST-4-02	TC-12	RF Bypass Pwr. Supply
24	.02	200		484-02	GT2S2		ST-4-02	TC-12	Tone Compensation
25	.5	200		484- 5	GT2P5		ST-2-5	TC-5	Ratio Det. Bias Filter
26	.02	200		484-02	GT2S2		ST-4-02	TC-12	2nd IF Cathode Bypass
27	.1	200		484-1	GT2P1		ST-2-1	TC-1	AVC Filter
28	.02	600		684-02	GT6S2		ST-6-02	TC-12	AM Conv. Decoupling
29	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Tone Compensation
30	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	" "
31	10000	500		1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	
32	10000	500		1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	Audio Coupling
33	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AM Diode RF Filter
34	100	500		1469-0001	5R5T1	GP1K-100	MOS.5-31	MS-31	" " " " Silver
35	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Diode Load Cap.
36	3000	500		1467-003	1W5D3	GP2M-003	MW.5-23	1FM-23	De-emphasis
37	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	2nd IF Screen Bypass
38	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	AVC Filter
39	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	" "
40	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	Fil. Bypass
41	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	2nd IF Plate Decoupling
42	10000	500		1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	1st IF Decoupling
43	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	1st IF Cathode Bypass
44	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM Conv. Decoupling
45	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM Osc. Decoupling
46	25	300		1469-0000 25	5R5Q25	GP1K-25	MOS.5-425	MS-425	FM Osc. Grid Cap.
47	2	300				NPOK-3			FM Osc. Coupling
48	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	Conv. Cathode Bypass
49	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	RF Coupling
50	47	300		1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	" "
51	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	RF Bypass Pwr. Supply
52	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM RF Screen Bypass
53	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	FM RF Cathode Bypass
54	470	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Coupling
55	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	Filament Bypass
56	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	" "
57	3000	300		1467-003	1W5D3	GP2M-003	MW.5-23	1FM-23	AVC Filter Note
58	10	300		1469-00001	5R5Q1	NPOK-10	MOS.5-41	MS-41	FM Band Pass Compensation

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
112	117VAC @ .78A	660VCT .102A	5.0VAC @ 2.0A	6.3VAC 3.25A	TA-18.053	P-6013#	PV-100 #	P-2953 #

Drill new mounting holes and add series res. to reduce plate voltage.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
113	10KΩ CT	4Ω	540Ω CT	.4Ω	ZB-15.019	A-3823	RO-110	A-2936	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.				
114	PM	4Ω		ST-102 † MOD P12-S	12A6 †	†Replace output XFMR to match 6-8Ω voice coil.
	CONE DIA.	V. C. DIA.				
115	11 3/4"	1 IN				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA: MEISSNER PART No.	
116	Loop Ant.		.4Ω	LC5.018		
117	Loop Load		1.6Ω	LA2.273		
118	FM Dipole		0Ω	LA5.010		
119	FM Ant.	.1Ω	.2Ω	LA2.241		
120	FM RF		0Ω	LA2.243		
121	BC Osc.	.6Ω	5.5Ω	LA2.221	14-1060	
122	FM Osc.	0Ω	0Ω	LA2.222		
123	AM 1st IF	12Ω	12Ω		16-6678	
124	FM 1st IF	.5Ω	.5Ω	ZB-2.276		
125	AM 2nd IF	12Ω	12Ω		16-6678	
126	FM 2nd IF	.5Ω	.5Ω	ZB-2.276		
127	FM Ratio Det.	.5Ω	.5Ω	ZC-2.278		
128	RF Plate Chk.		1Ω			
129	RF Plate Chk.		0Ω	LA2.242		Wound on 1KΩ resistor

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: BRUNSWICK PART No.	REPLACEMENT DATA	NOTES
130	Bayonet	6-8V	0.15A	Brown			Type 47
131	Bayonet	6-8V	0.15A	Brown			Type 47

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA BRUNSWICK PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
59	100	500		1469-0001	5R5T1	GP1K-100	MOS.5-31	MS-31	AM Osc. Grid Cap. Note Silver
60	12	300							Fixed Trimmer Note Silver
61	220	300		1468-00025	5W5T25	GP2K-200	MO.5-325	1FM-325	Phono Tone Comp.
135	1500	300		1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	Conv. Plate Decoupling Note.

Note. Not used in all models.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BRUNSWICK PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
62A	500KΩ	½	RA-9.069	D18-133X	T-88	Volume control tapped @ 50KΩ
B	Shaft		Not Req.	A	Not Req.	Attach to 61A Per Instructions
63A	1 Meg.	½	RA-9.112	D11-137	M-61-S	Bass control
B	Shaft		Not Req.	A	Not Req.	Attach to 62A Per Instructions
64A	1 Meg.	½	RA-9.070	D13-137	M-63-Z	Tone Control
B	Shaft		Not Req.	A	Not Req.	Attach to 63A Per Instructions
C	Switch		Not Req.	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA BRUNSWICK PART No.	IRC PART No.	IDENTIFICATION CODES	
65	100Ω	½			Br.-Blk.-Br.	FM RF Cathode
66	22KΩ	1		BTA-22K	Red-Red-Or.	FM RF Screen
67	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	FM Conv. Grid
68	47Ω	½			Yl.-Vi.-Blk.	FM Conv. Cathode
69	440Ω	½		BTS-470	Yl.-Yl.-Br.	" " "
70	22KΩ	½		BTS-22K	Red-Red-Or.	FM Osc. Grid
71	2000Ω	½		BTS-2200	Red-Blk.-Red	FM Osc. Plate
72	2200Ω	½		BTS-2200	Red-Red-Red	FM Conv. Plate Decoup.
73	1000Ω	½		BTS-1000	Br.-Blk.-Red	Ant. Loading
74	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	AM Conv. Grid
75	15KΩ	2		BT-2-15K	Br.-Grn.-Or.	AM Conv. Decoup.
76	22KΩ	½		BTS-22K	Red-Red-Or.	AM Osc. Grid
77	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn.	AVC Net.
78	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn.	" "
79	220KΩ	½		BTS-220K	Red-Red-Yl.	" "
80	100Ω	½			Br.-Blk.-Br.	1st IF Cathode
81	2000Ω	½		BTS-2200	Red-Blk.-Red	1st IF Decoupling
82	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Diode Filter
83	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	Diode Load
84	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	AVC Net.
85	220KΩ	½		BTS-220K	Red-Red-Yl.	2nd IF Grid
86	100Ω	½			Br.-Blk.-Br.	2nd IF Cathode
87	22KΩ	½		BTS-22K	Red-Red-Or.	2nd IF Screen
88	1000Ω	½		BTS-1000	Br.-Blk.-Red	2nd IF Plate Decoupling
89	22KΩ	½		BTS-22K	Red-Red-Or.	De-emphassis
90	12KΩ	½		BTS-12K	Br.-Red-Or.	Ratio Det. Diode Load
91	12KΩ	½		BTS-12K	Br.-Red-Or.	" " " "
92	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	Bias
93	10KΩ	½		BTS-10K	Br.-Blk.-Or.	Tone Compensation
94	10 Meg.	½		BTS-10 Meg.	Br.-Blk.-Blue	1st AF Grid
95	220KΩ	½		BTS-220K	Red-Red-Yl.	1st AF Plate Load
96	220KΩ	½		BTS-220K	Red-Red-Yl.	2nd IF Grid
97	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	2nd IF Plate Load
98	2000Ω	½		BTS-2200	Red-Blk.-Red	2nd IF Cathode
99	10Ω	½		BW-½-10	Br.-Blk.-Blk.	" " "
100	220KΩ	½		BTS-220K	Red-Red-Yl.	Phase Inv. Grid
101	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Phase Inv. Cathode
102	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Phase Inv. Plate Load
103	220KΩ	½		BTS-220K	Red-Red-Yl.	Output Grid
104	220KΩ	½		BTS-220K	Red-Red-Yl.	" "
105	200Ω	2		BW-2-220	Red-Blk.-Br.	Output Cathode
106	100Ω	½		BW-½-100	Br.-Blk.-Br.	Feedback
107	2000Ω	½		BTS-2200	Red-Blk.-Red	Decoupling
108	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Series Test Socket
109	2200Ω	10		AB-2250		Filter
110	2 Meg.	½		BTS-2.2 Meg.	Red-Blk.-Grn.	Phono Tone Compensation
111	270KΩ	½		BTS-270K	Red-Yl.-Yl.	Phono Shunt

DATE 5/49 499-4 SET #61 FOLDER 4

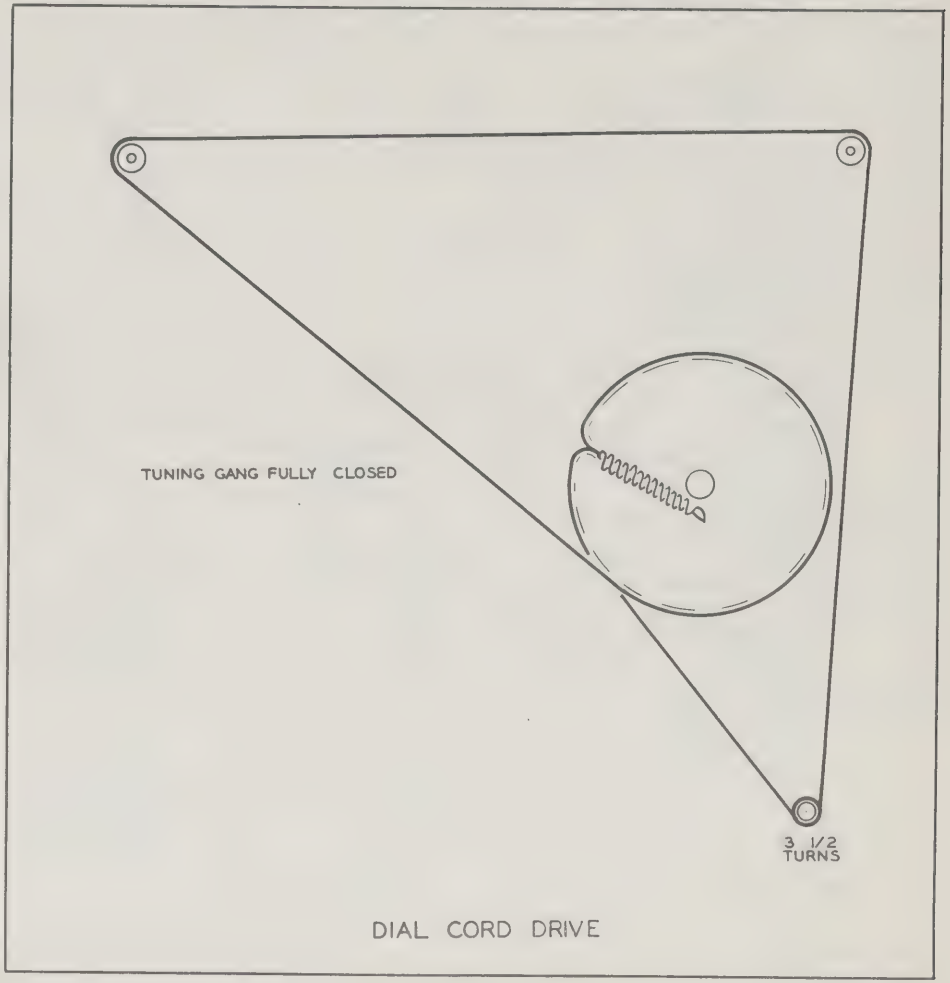
PARTS LIST AND DESCRIPTIONS (Continued)

PHONO CARTRIDGE

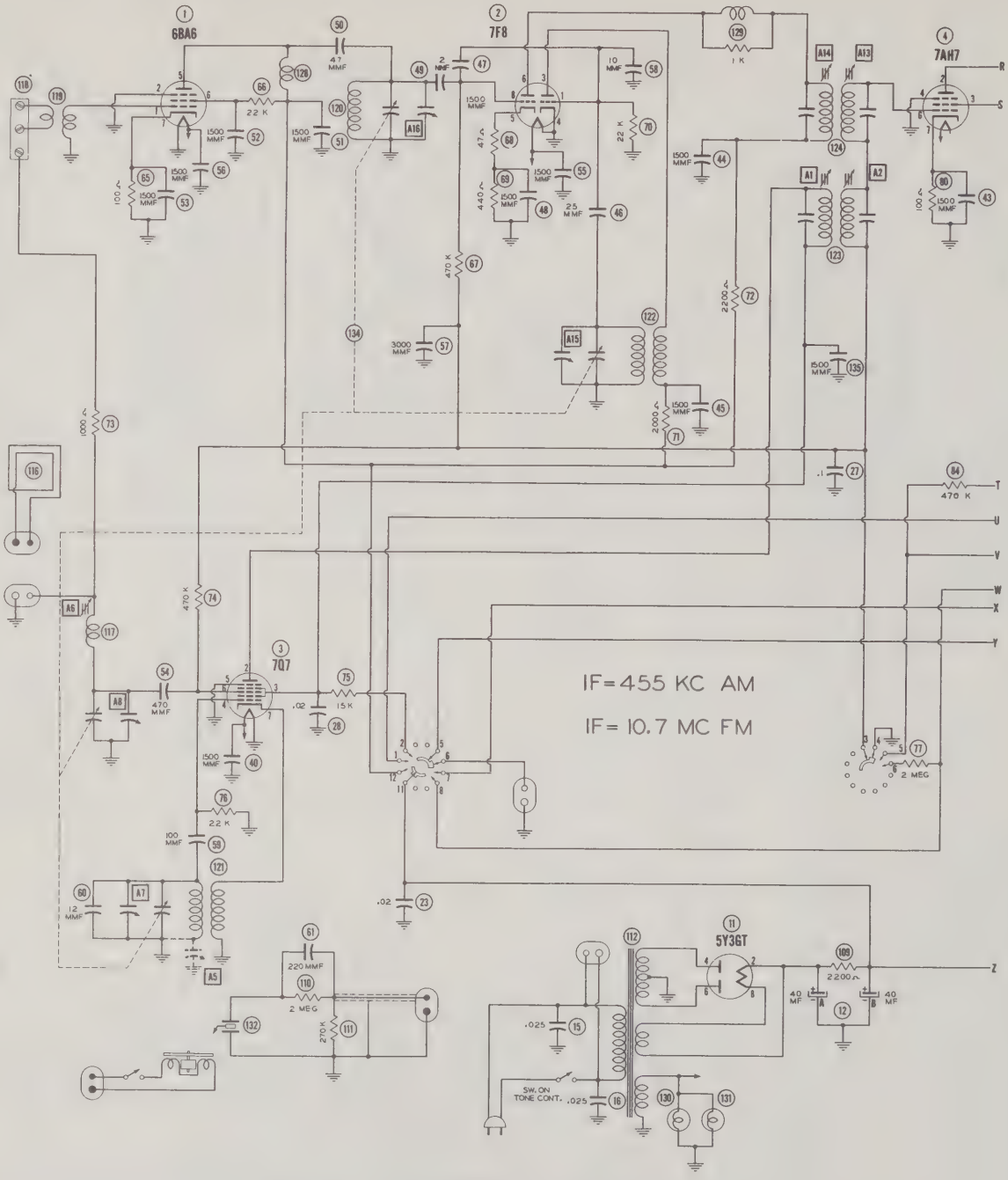
ITEM No.	REPLACEMENT DATA BRUNSWICK PART No.	REPLACEMENT DATA ASTATIC PART No.	REMARKS
132		QT3-J or QT3-M	

MISCELLANEOUS

ITEM No.	PART NAME	BRUNSWICK PART No.	NOTES
133	Switch	SA-12.060	Band
134	2 Gang Var. Cap.	C6.042	(22-512MMF, 19-192MMF)



DIAL CORD DRIVE



VOLTAGE READINGS

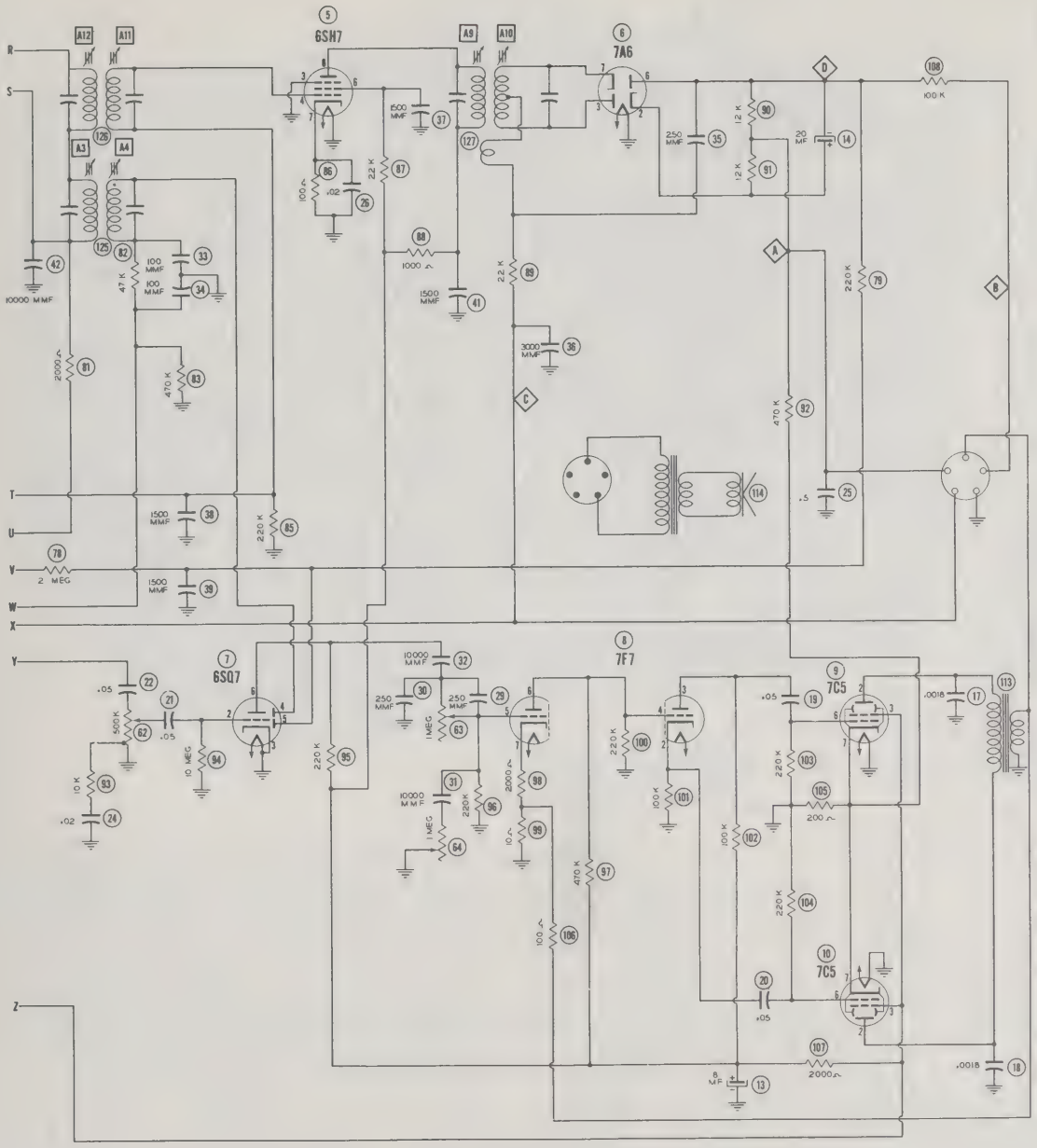
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	0V	0V	0V	6.3VAC	220VDC	105VDC	1.5VDC	
2	7F8	5-4.4VDC	6.3VAC	205VDC	0V	2.2VDC	210VDC	0V	-.1VDC
3	7Q7	0V	95VDC	95VDC	5-9VDC	0V	0V	0V	6.3VAC
4	7AH7	0V	225VAC	225VDC	0V	0V	-.2VDC	1VDC	6.3VAC
5	6SH7	0V	0V	1.4VDC	0V	1.4VDC	130VDC	6.3VAC	210VDC
6	7A6	0V	2.5VDC	2.3VDC	.3VDC	0V	2.4VDC	2.6VDC	6.3VAC
7	6SQ7	0V	-.4VDC	0V	-.3VDC	.3VDC	100VDC	0V	6.3VAC
8	7R7	0V	80VDC	135VDC	80VDC	0V	80VDC	1VDC	6.3VAC
9	7C5	0V	310VDC	230VDC	0V	0V	0V	23VDC	6.3VAC
10	7C5	0V	310VDC	230VDC	0V	0V	0V	23VDC	6.3VAC
11	5Y3GT	0V	320VDC	0V	330VAC	0V	330VAC	0V	320VDC

TAKEN WITH VACUUM TUBE VOLTMETER.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

©Howard W. Sams & Co., Inc. 1949



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
‡ 1	6BA6	0Ω	0Ω	0Ω	.1Ω	80KΩ	100KΩ	100Ω	
‡ 2	7F8	33KΩ	.1Ω	80KΩ	0Ω	520Ω	80KΩ	0Ω	1 Meg.
3	7x7	0Ω	96KΩ	95KΩ	22KΩ	0Ω	3.5 Meg.	1Ω	.1Ω
4	7AH7	0Ω	90KΩ	80KΩ	.2Ω	0Ω	2.7 Meg.	100Ω	.1Ω
5	6SH7	0Ω	6Ω	1kΩ	12.KΩ	100Ω	100KΩ	.1Ω	80KΩ
‡ 6	7A6	0Ω	360KΩ	Inf.	54KΩ	0Ω	380KΩ	Inf.	.1Ω
7	6SQ7GT	0Ω	10 MEG	0Ω	54KΩ	342KΩ	300KΩ	0Ω	.1Ω
8	7F7	0Ω	1kΩ	190KΩ	200KΩ	220KΩ	200KΩ	2.2 KΩ	.1Ω
9	7C5	0Ω	90KΩ	80KΩ	Inf.	Inf.	220KΩ	220Ω	.1Ω
10	7C5	0Ω	90KΩ	80KΩ	Inf.	Inf.	220KΩ	220Ω	.1Ω
11	5Y3GT	Inf.	8KΩ	Inf.	130Ω	Inf.	140Ω	Inf.	80KΩ

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

© Howard W. Sams & Co., Inc. 1949

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.
Use insulated alignment screwdriver for all adjustments.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
On receivers without AM Osc. Padder omit adjustment of A5 in step 2.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to large AM stator of tuning cap. Low side to chassis.	455KC	BC (fully clockwise)	Tuning cap fully open	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output.
2.	200MMFD	High side to external AM Ant. terminal. Low side to chassis.	600KC	"	600KC	"	A5, A6	" " " "
3.	200MMFD	"	1600KC	"	1600KC	"	A7	" " " "
4.	200MMFD	"	"	"	Tune for maximum output.	"	A8	Adjust for maximum output. Repeat steps 2, 3, 4 until no further improvement can be made.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR VTVM AND OUTPUT METER

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to Pin 4 (Grid) of 6SH7. Low side to chassis.	10.7MC (Unmodulated)	FM (center position)	Tuning cap fully open	DC Probe to Point (B) Common to Point (A)	A9	Adjust for maximum deflection.
6.	.01MFD	"	"	"	"	DC Probe to Point (C) Common to Point (A)	A10	Use zero center meter if available and adjust A10 for zero deflection. Tune signal generator above and below 10.7MC for maximum deflection(approximately 200KC either side and note meter readings. They should be approximately equal. If not, then it will be necessary to readjust A9 until the two readings are approximately equal.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7.	.01MFD	High side to Pin 6 (Grid) of 7AH7. Low side to chassis.	10.7MC (400∿ Amp. modulation)	"	"	Across Voice Coil	A11, A12	Connect 1000Ω carbon resistor across primary of ratio detector transformer (126). Adjust A11, A12 for maximum output.
8.	.01MFD	High side to Pin 8 (Grid) of 7F8. Low side to chassis.	"	"	"	"	A13, A14	Adjust for maximum output. Remove 1000Ω resistor. Continue with FM-RF Alignment in Step 9.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

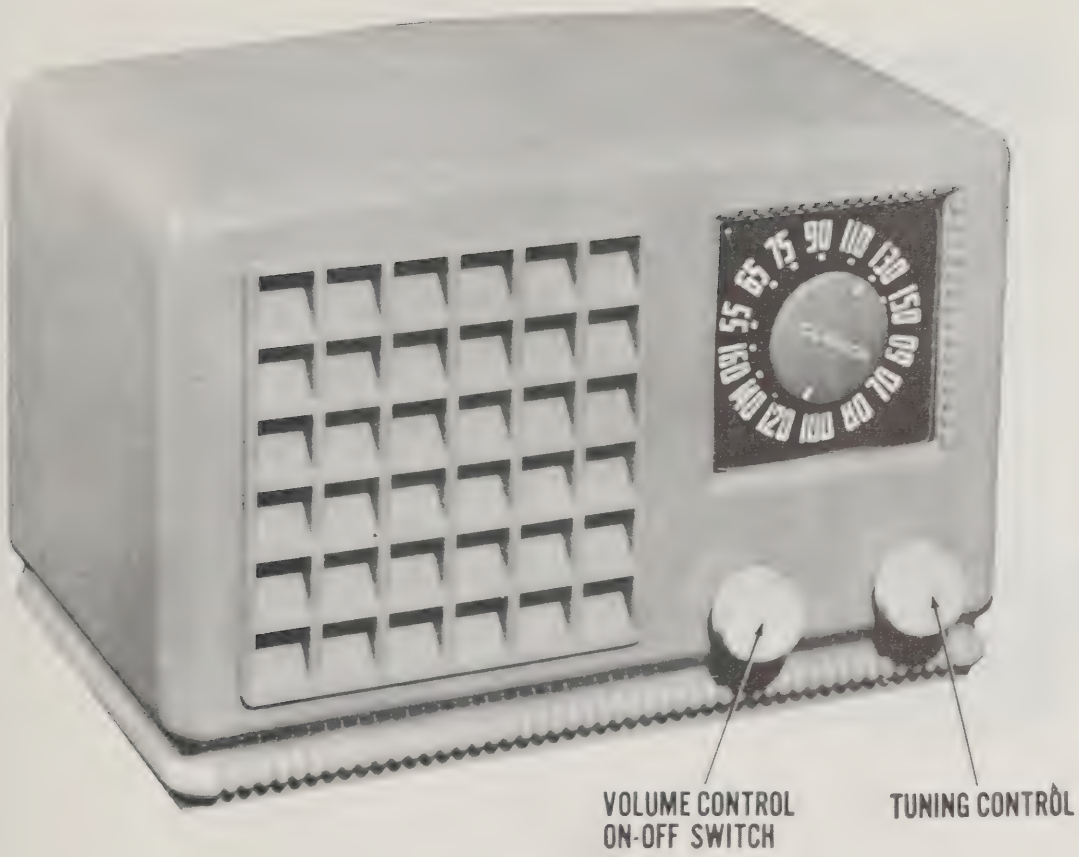
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5.	.01MFD	High side to Pin 6 (Grid) of 7AH7. Low side to chassis.	10.7MC (Freq.Mod	FM (Center position)	Tuning cap fully open	Vertical input to point (D) Ground to chassis.	A9, A11 A12	Disconnect 20MFD cap (14) from Point D. Adjust A9, A11, and A12, for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
6.	.01MFD	High side to Pin 8 (Grid) of 7F8. Low side to chassis.	"	"	"	"	A13, A14	Adjust for maximum amplitude, symmetry and coincidence of pattern Per Fig. 1. Reconnect cap (14) to Point D.
7.	.01MFD	High side to Pin 6 (Grid) of 7AH7. Low side to chassis.	"	"	"	Vertical input to Point (C) Ground to chassis.	A10	Adjust for occurence of crossover lines at scope horizontal sweep line Per Fig. 2. Continue with FM-RF Alignment in Step 9

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	2-150Ω carbon res.	Across FM dipole terminals "A1" & "A2".	108MC (Unmod.)	FM (center position)	108MC	DC Probe to Point (B) Common to Point (A)	A15	Adjust for maximum deflection.
10.	2-150Ω carbon res.	"	"	"	Tune for maximum deflection.	"	A16	Rock tuning cap and adjust for maximum deflection.
11.	2-150Ω carbon res.	"	90MC (Unmod.)	"	"	"	FM-RF Coil (119)	Compress or expand coil slightly for maximum deflection. Repeat steps 9, 10, and 11 until no further improvement can be made.

FIG. 1

FIG. 2



CLARION
MODEL 12801

CLARION MODEL 12801

TRADE NAME	Clarion, Model 12801
MANUFACTURER	Warwick Mfg., Corp., 4640 W. Harrison St. Chicago 44, Illinois
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FOUR)	Types 12SA7 Converter, 12SQ7 DET-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-DC RATING .25 Amp., @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1625KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial.

Use isolation transformer if available. If not, connect a .1 MFD cap. in series with low side of signal generator and chassis.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side rear stator of tuning cap. Low side to B-.	455KC	Tuning cap fully open.	Across Voice Coil	A1, A2	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	250MMF	High side to Ant. lead. Low side to chassis.	1625KC	"	"	A3	Adjust for maximum output.
3.	250MMF	"	1400KC	Tune for maximum signal.	"	A4	" " " "

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

CLARION MODEL 12801

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CLARION PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2	DET-AVC-AF	12SQ7	12SQ7	8Q	
V3	Power Output	50L6GT	50L6GT	7AC	
V4	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: CLARION PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	150	B18-288	PRSA40302	EDL33150		DSB-303	TA-305	Filter Red
B	30	150							Filter Yellow
C	20	25							Output Cath. Byp. Blue
C2	.01	400	A16-156	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Line Isolation
C3	5		A83-355	1468-0000 05	5W5V5	NP0K-5	M0.5-55	MS-55	RF Coupling
C4	50	500	A15-175	1468-00005	5W5Q5	GP1K-50	M0.5-45	1FM-45	Osc. Grid Cap.
C5	.01	400	A16-156	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tuning Cap Isolation
C6	.05	200	A16-152	P283-05	GT2S5		ST-4-05	TM-15	AVC Filter
C7	250	500	A15-176	1468-00025	5W5T25	GP2K-250	M0.5-325	1FM-325	Diode Filter
C8	.005	600	A16-156	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C9	250	500	A15-176	1468-00025	5W5T25	GP2K-250	M0.5-325	1FM-325	AF Plate Bypass
C10	.005	600	A16-156	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C11	.005	600	A16-156	P688-005	GT6D5		ST-6-005	TM-25	Output Plate Bypass
C12	.02	600	A16-151	P688-02	GT6S2		ST-6-02	TM-12	Line Filter

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: CLARION PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1	1 Meg.	½	A24-174		15/16-63-2 SPST. SW	Volume control and switch. Attached @ Factory

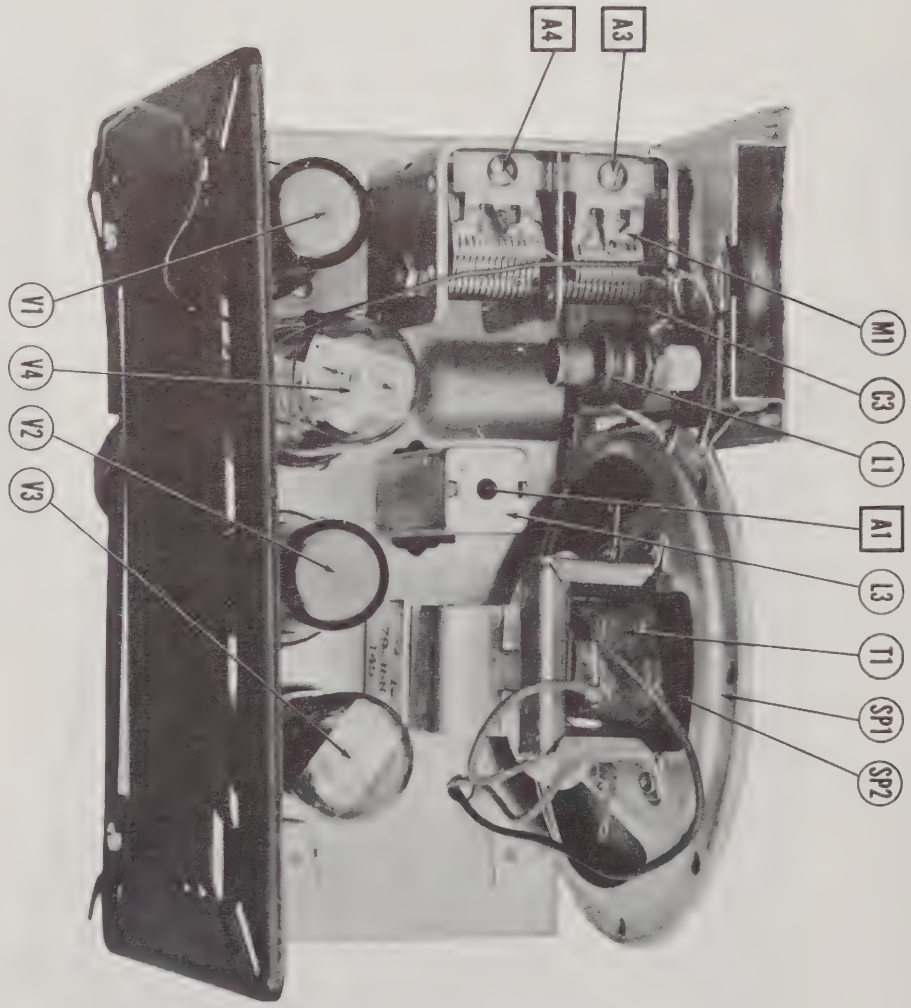
RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: CLARION PART No.	IRC PART No.	IDENTIFICATION CODES	
R2	22KΩ	½	A60-659	BTS-22K	Red-Red-Or.	Osc. Grid
R3	2.2 Meg.	½	A60-684	BTS-2.2 Meg.	Red-Red-Grn.	AVC Network
R4	10 Meg.	½	A60-663	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid
R5	470KΩ	½	A60-662	BTS-470K	Yl.-Vi.-Yl.	AF Plate
R6	470KΩ	½	A60-662	BTS-470K	Yl.-Vi.-Yl.	Output Grid
R7	150Ω	½	A60-686	BW-½-150	Br.-Grn.-Br.	Output Cathode
R8	2200Ω	1	A60-737	BTA-2200	Red-Red-Red	Filter
R9	47Ω	5	A60-750	AB-50		Line Dropping
R10	27Ω	½	A60-690		Red-Vi.-Blk.	Rectifier Ballast

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA: CLARION PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2100Ω	3.3Ω	136Ω	.6Ω	A80-239	A-3876	RO-2	A-2928	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

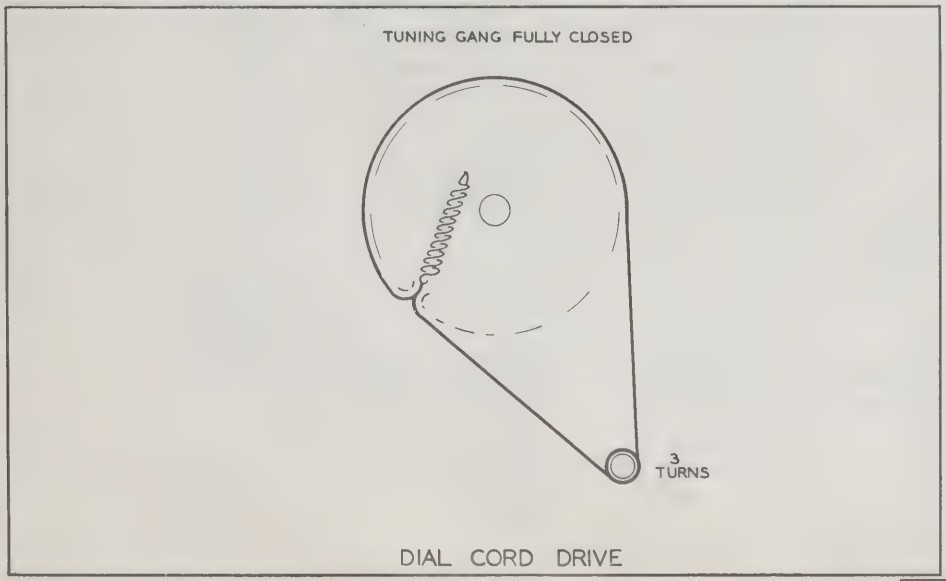
ITEM No.	RATINGS		REPLACEMENT DATA CLARION PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-105 #		
SP1	PM	3.3Ω	B79-360	MOD. P5-X	5A07 #	# Remount output XFMR; use original mounting or fabricate mounting bracket.
	CONE DIA.	V. C. DIA.				
SP2	4 3/4"	9/16"				

R F COILS

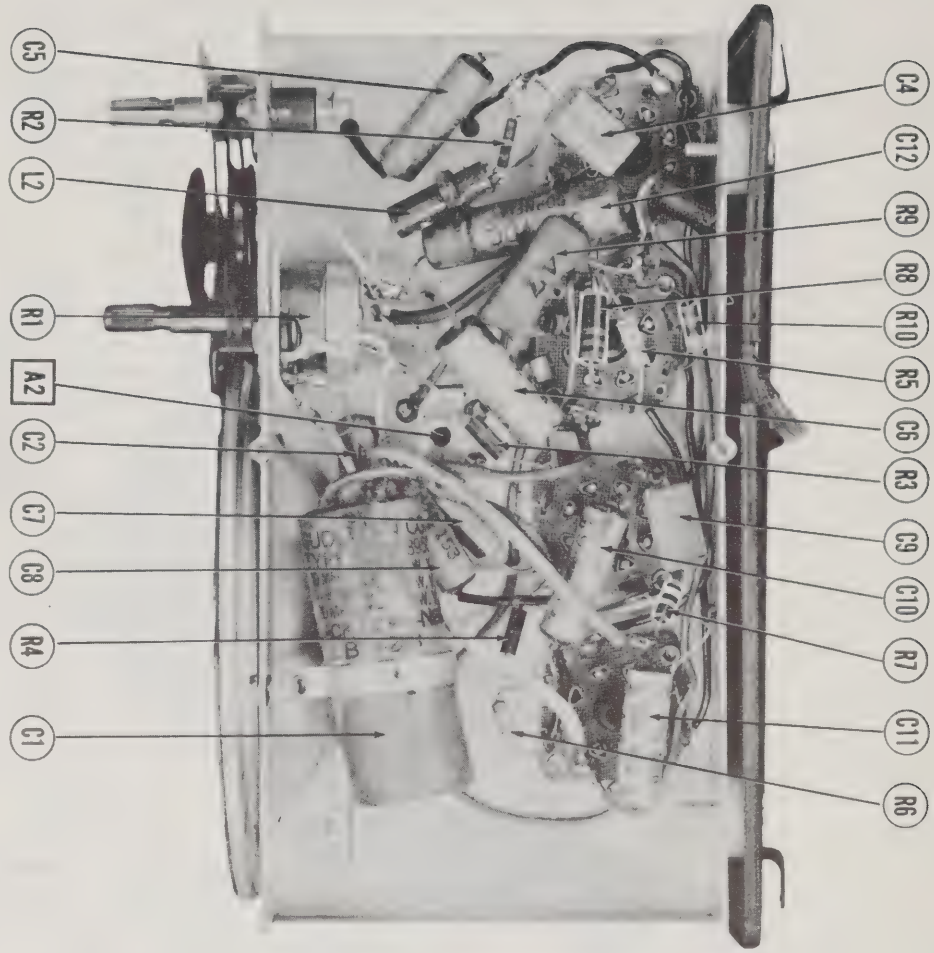
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CLARION PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Ant. Coil	60Ω	6Ω	A10-485	
L2	Osc. Coil		5Ω	B10-502	
L3	IF Trans.	20Ω	20Ω	A10-479	16-6678

MISCELLANEOUS

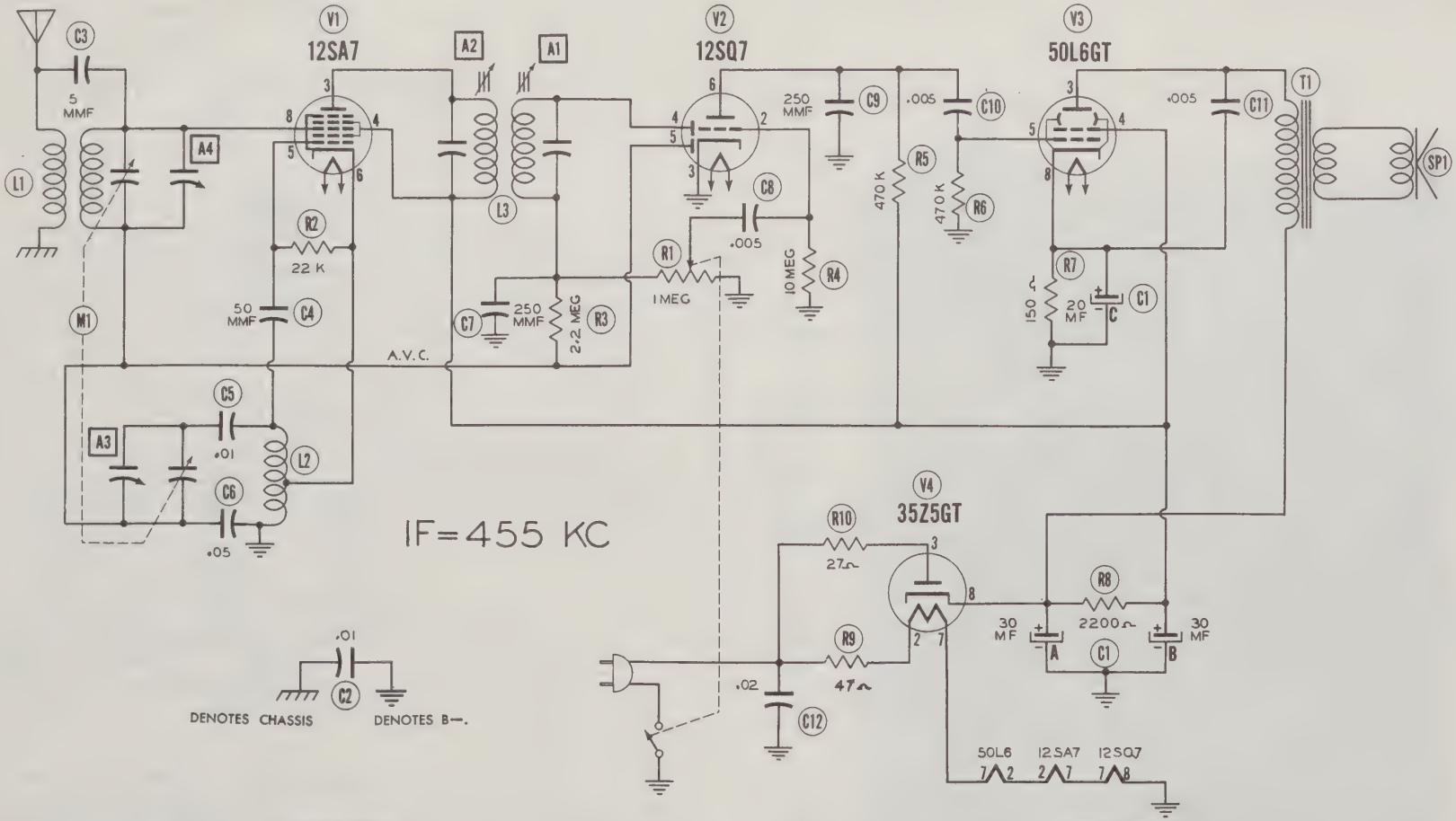
ITEM No.	PART NAME	CLARION PART No.	NOTES
M1	2 Gang Var. Cap	B19-194	(29-474MMF, 31-206MMC)
	Dial Scale	B67-510	
	Dial Crystal	A48-42	
	Dial Pointer	A58-69	
	Knob	A52-243	Black
	Knob	A52-222	White
	Cabinet	D42-424	Ivory
	Cabinet	A42-433	Black
	Cabinet	A42-434	Red
	Cabinet	A42-435	Green



CHASSIS—BOTTOM VIEW



CLARION MODEL 1280



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0V	25VAC	100VDC	100VDC	§-8.4VDC	0V	13VAC	-.6VDC
V 2	12SQ7	0V	-.6VDC	0V	-.6VDC	-.6VDC	50VDC	13VAC	0V
V 3	50L6GT	0V	25VAC	120VDC	100VDC	0V	0V	75VAC	6.5VDC
V 4	35Z5GT	0V	110VAC	100VAC	117VAC	115VAC	115VAC	75VAC	125VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	Inf.	24Ω	*2.2KΩ	*2.2KΩ	22KΩ	.5Ω	12Ω	3.2 Meg.
V 2	12SQ7	Inf.	10 Meg.	0Ω	1 Meg.	3.2 Meg.	*470KΩ	12Ω	0Ω
V 3	50L6GT	Inf.	24Ω	*130Ω	*2.2KΩ	470KΩ	0Ω	80Ω	150
V 4	35Z5GT	Inf.	110Ω	100Ω	150Ω	180Ω	180Ω	80Ω	10KΩ

* Measured from pin 8 of V4

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949

499-5

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

EMERSON MODELS
579A, 596 (Ch. 120034A)

EMERSON MODEL 579A

TRADE NAME Emerson, Models 579A, 596
MANUFACTURER Emerson Radio and Phonograph Corp., 111 Eighth Ave., New York 11, New York
TYPE SET AC Operated Combination Phono-Radio, Superheterodyne Receiver with Loop Antenna.
TUBES(FIVE) Types 12BE6 Converter, 12BA6,IF Amp., 12AT6 DET-AVC-AF, 50B5 Power Output, 35W4 Rectifier.

POWER SUPPLY 105-125 Volts AC RATING .25 Amp., @ 117 Volts AC
TUNING RANGE—BROADCAST 540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning cap fully closed and set pointer at reference mark on dial backplate at low frequency end of dial.

Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to rear stator of tuning cap. Low side to B-.	455KC	Tuning cap fully open.	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	200MMF	High side to ext. ant. lead. Low side to ext. grd. lead.	1600KC	"	"	A5	Adjust for maximum output.
3.	200MMF	"	1400KC	Tune for maximum output.	"	A6	" " " "
4.	Some models have a trimmer on the antenna section on the tuning cap. Back this trimmer (A7) out to minimum capacity so trimmer A6 is effective.						

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-6 SET #61 FOLDER 6

PARTS LIST AND DESCRIPTIONS

EMERSON MODEL 579A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	925061	PRSA150/30-50	EDL5315		DSB-5030-150	TA530	Red Filter
B	30	150							Green Filter
C2	.1	200	920040	P288-1	GT2P1		ST-2-1	TM-1	AVC Filter
C3	.1	200	920040	P288-1	GT2P1		ST-2-1	72P1	Line Isolation
C4A	220		910000	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Diode Filter Note 1
B	220		910000	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass Note 1
C	.002		920515	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling Note 1
D	.005		920180	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" " " 1
C5	.05	400	920030	P488-05	GT4S5		ST-4-05	TM-15	Tone Compensation
C6	.05	400	920030	P488-05	GT4S5		ST-4-05	TM-15	Phono Isolation
C7	.05	400	920030	P488-05	GT4S5		ST-4-05	TM-15	Line Filter

Note 1. Emerson unit part # 470310

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	390024	D11-133	AM-58-S	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to R1A Per Instructions
C	Switch		Not Req.	41	SW-A	" " " " "

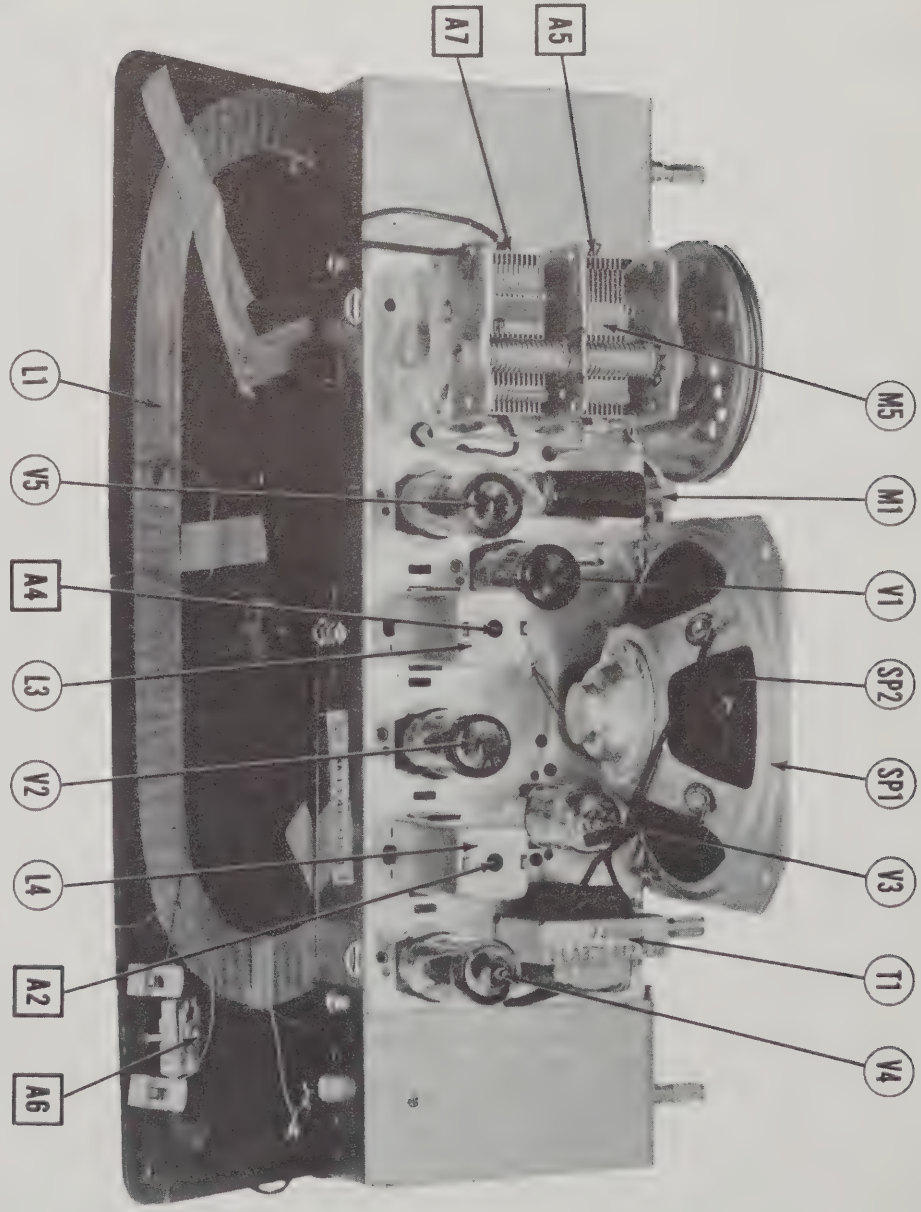
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	IRC PART No.	IDENTIFICATION CODES	
R2	15 Meg.	½	351490	BTS-15 Meg.	Br.-Grn.-Blue	AVC Network
R3	22KΩ	½	340810	BTS-22K	Red-Red-Or.	Osc. Grid
R4	3.3 Meg.	½	351330	BTS-3.3 Meg.	Or.-Or.-Grn.	AVC Network
R5	100Ω	½	340250	BW-½-100	Br.-Blk.-Br.	IF Cathode
R6	1 Meg.	½	351210	BTS-1 Meg.	Br.-Blk.-Grn.	Series Phono
R7	15 Meg.	½	351490	BTS-15 Meg.	Br.-Grn.-Blue	AF Grid
R8	470KΩ	½	351130	BTS-470K	Yl.-Vi.-Yl.	AF Plate
R9	470KΩ	½	351130	BTS-470K	Yl.-Vi.-Yl.	Output Grid
R10	150Ω	½	340290	BW-½-150	Br.-Grn.-Br.	Output Cathode
R11	10KΩ	½	340730	BTS-10K	Br.-Blk.-Or.	Tone Compensation
R12	39Ω	1	370150		Or.-White-Blk.	Rectifier Ballast
R13	1000Ω	1	370490	BTA-1000	Br.-Blk.-Red	Filter

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: EMERSON PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2300Ω	3.5Ω	190Ω	.6Ω	734023	A-3876*	RO-2 *	A-2928 *	* Bend mounting tabs down

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA EMERSON PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-113		
SP1	PM	3.5Ω	180032H	MOD. P4-X	4A07	
	CONE DIA.	V. C. DIA.				
SP2	3 7/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA EMERSON PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Loop Ant.	0Ω	3Ω	700035	
L2	Osc. Coil	.5Ω	9Ω	716026	
L3	Input IF	21Ω	21Ω	720055	16-6678
L4	Output IF	21Ω	21Ω	720055	16-6678

DIAL LIGHTS

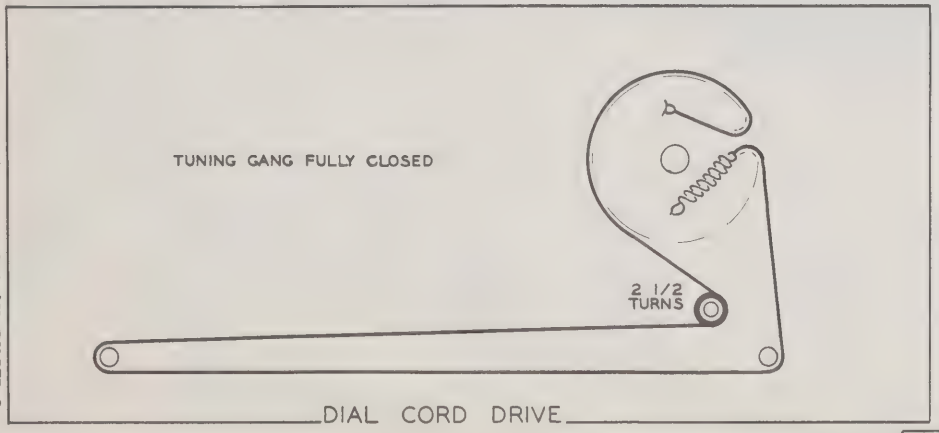
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA EMERSON PART No.		NOTES
M1	Bayonet	6-8V	0.15A	Brown	807000		Type #47

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA EMERSON PART No.	REPLACEMENT DATA ASTATIC PART No.	REMARKS
M2		L-70	

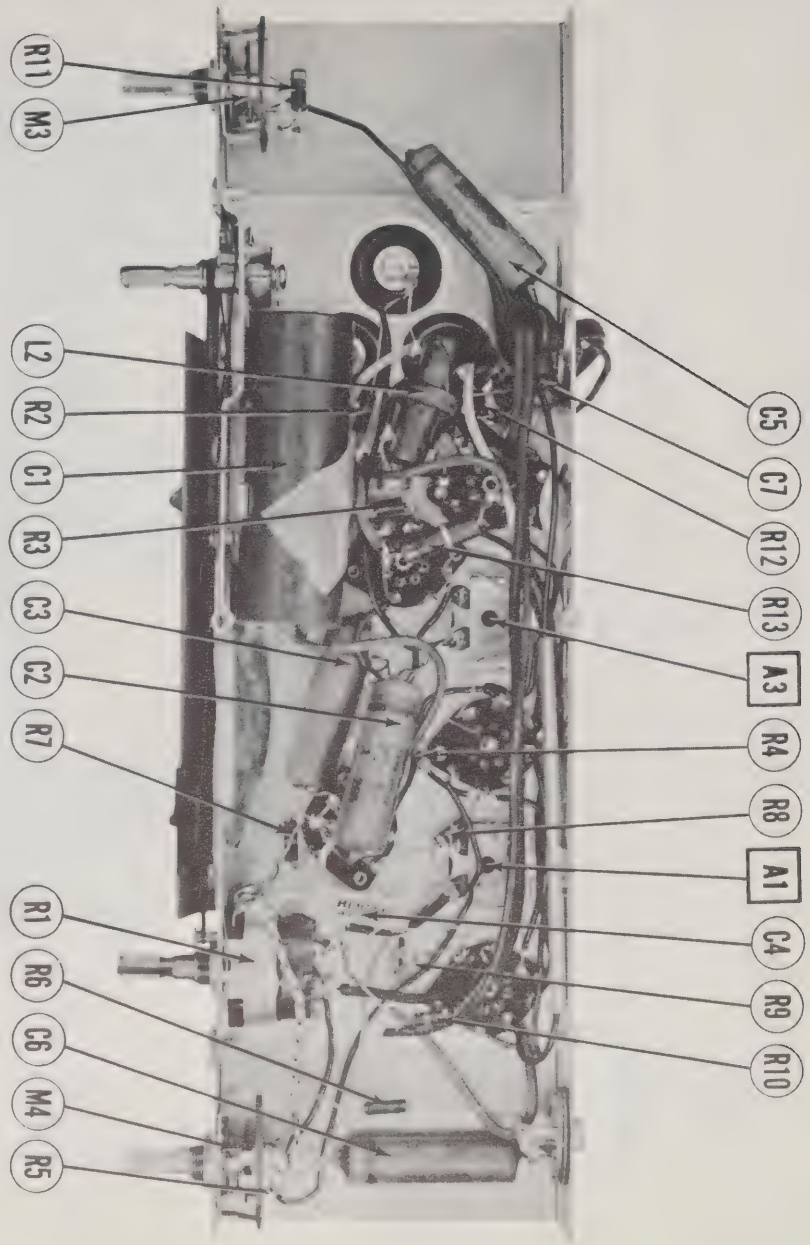
MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M3	Switch	510034	Tone
M4	Switch	510027	Radio-Phono
M5	2 Gang Var. Cap.	900023	(13-370MMF, 33-198MMF)
	Dial Pointer	525023	
	Knob	450115	
	Cabinet	140108	Plastic
	Cabinet	140196	Wood

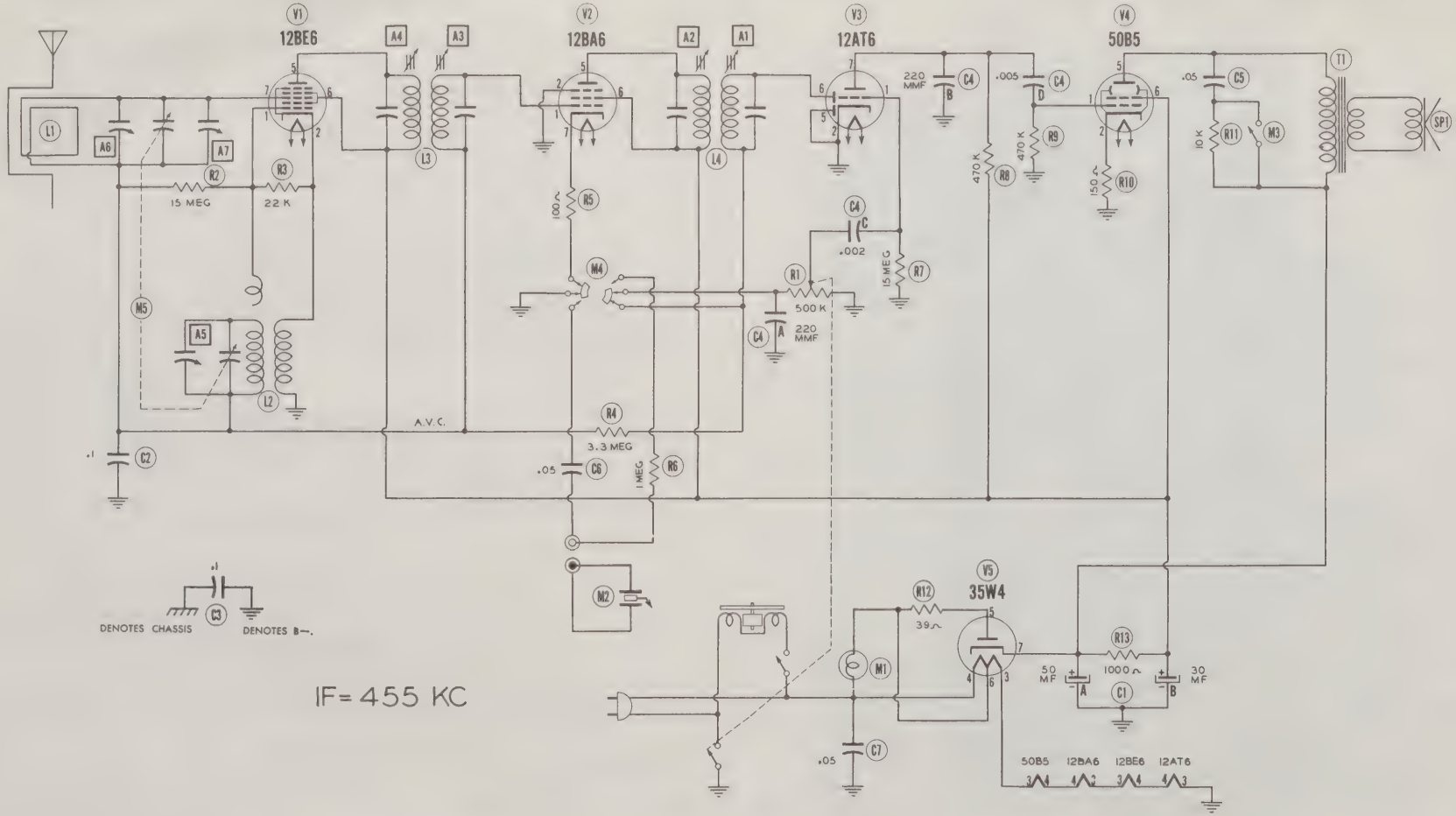


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



EMERSON MODEL 579A



IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-7VDC	0V	24VAC	12VAC	95VDC	95VDC	-.2VDC
V 2	12BA6	-.2VDC	0V	24VAC	12VAC	95VDC	95VDC	.3VDC
V 3	12AT6	-.3VDC	0V	0V	12VAC	0V	-.1VDC	55VDC
V 4	50B5	0V	0	-.2VDC	24VAC	24VAC	103VDC	95VDC	0V
V 5	35W4	0V	0V	85VAC	117VAC	110VAC	110VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	24Ω	12Ω	*1000Ω	*1000Ω	3 Meg.
V 2	12BA6	3.3 Meg.	0Ω	24Ω	3.6Ω	*1000Ω	*1000Ω	100Ω
V 3	12AT6	15 Meg.	0Ω	0Ω	16Ω	0Ω	500Ω	*470Ω
V 4	50B5	47KΩ	150Ω	90Ω	36Ω	* 185Ω	*100Ω	470Ω
V 5	35W4	0Ω	Inf.	80Ω	110Ω	110Ω	110Ω	60Ω

* Measured from pin 7 of V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

RTMA MEMBER RADIO-TELEVISION MANUFACTURERS ASSOCIATION

EMERSON MODEL 585

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

EMERSON MODEL 585

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."

"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

Date 5/49—No. 499-7 Set No. 61—Folder No. 7

EMERSON
MODEL 585

TRADE NAME	Emerson 585
MANUFACTURER	Emerson Radio and Phonograph Corp.,111 Eighth Ave., New York 11, New York
TYPE SET	AM-FM-Television-Phono Combination
TUBES	Thirty-six

POWER SUPPLY 105-125 Volts AC,60 cycles RATING 2.63 Amps. (TV),.53 Amp. (Radio) @ 117 Volts
TUNING RANGE– 540-1620KC(AM), 88-108MC(FM) and Channels 2-13 (TV).

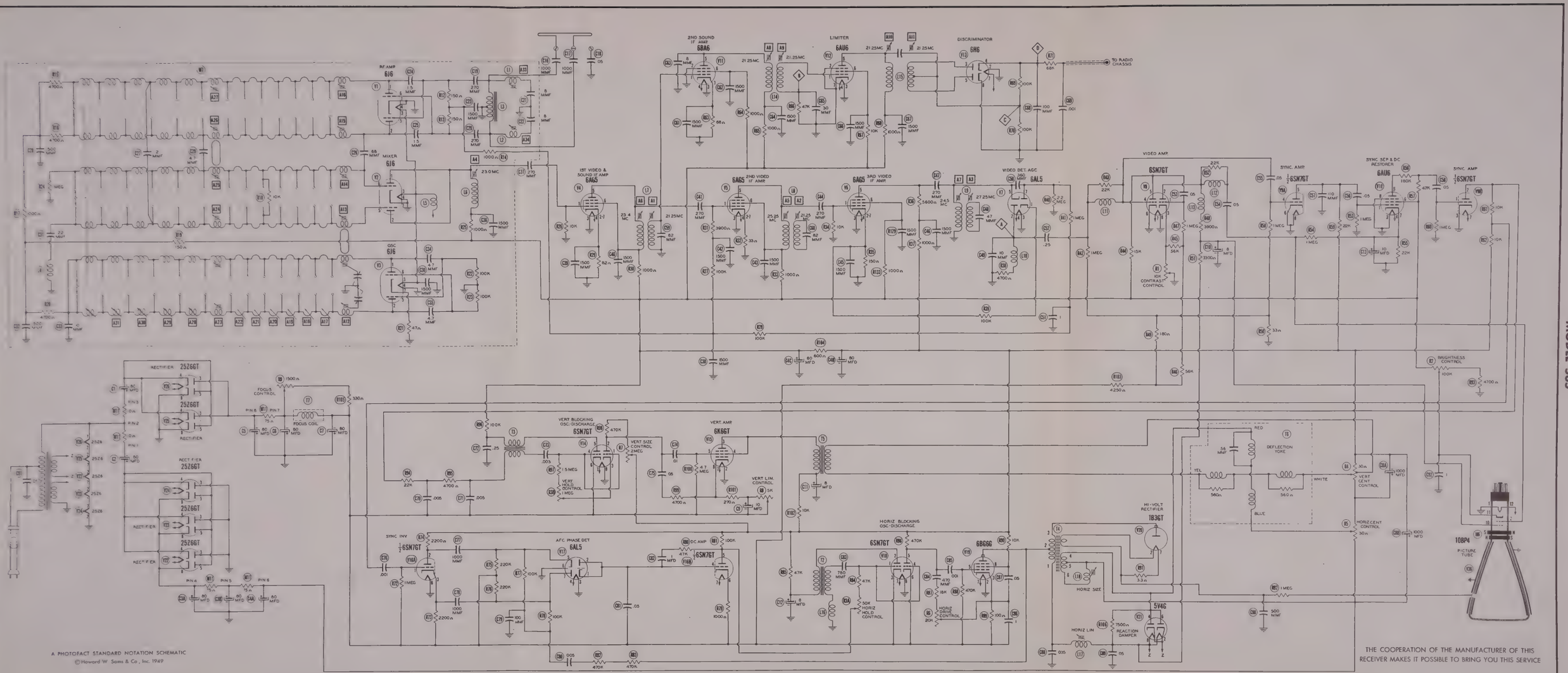
INDEX

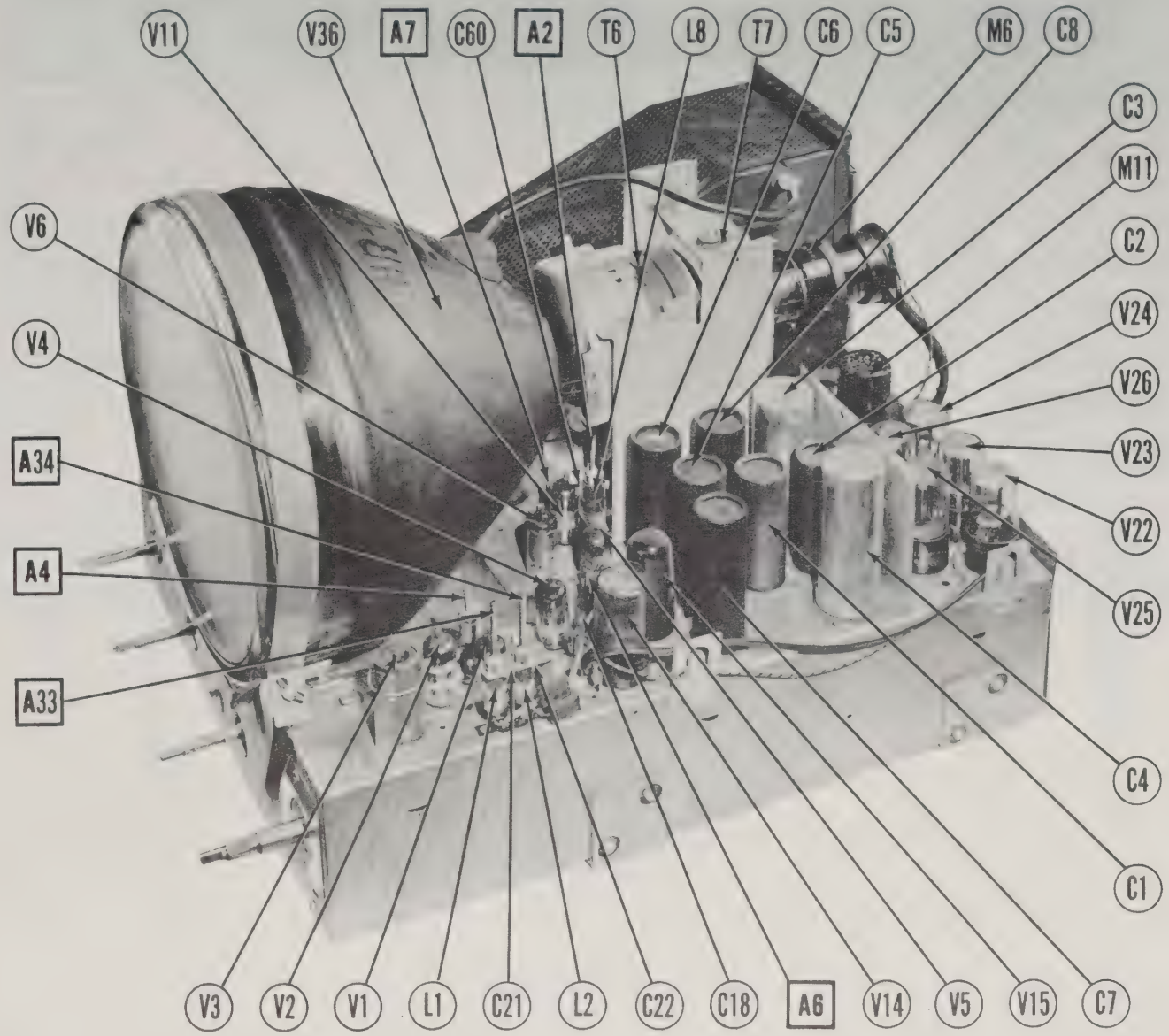
	Page
Alignment Instructions	8,9,10
Block Diagram	7
Disassembly Instructions	28
Parts List and Description	20,21,22,23
Photographs	
Cabinet-Rear View	23
Capacitor Identification	16,25
High Voltage Supply-Top View	10
RF Tuner-Left Side	6
RF Tuner-Right Side	11
Photographs (continued)	
Radio Chassis-Bottom View	18,19
Radio Chassis-Top View	27
Resistor Identification	17,24
TV Chassis-Top View	3,14
Trans., Inductor and Alignment Identification	4,13
Schematic-AM-FM	15,26
Schematic-TV	2
Tube Placement Chart	5
Voltage and Resistance Measurements	12

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

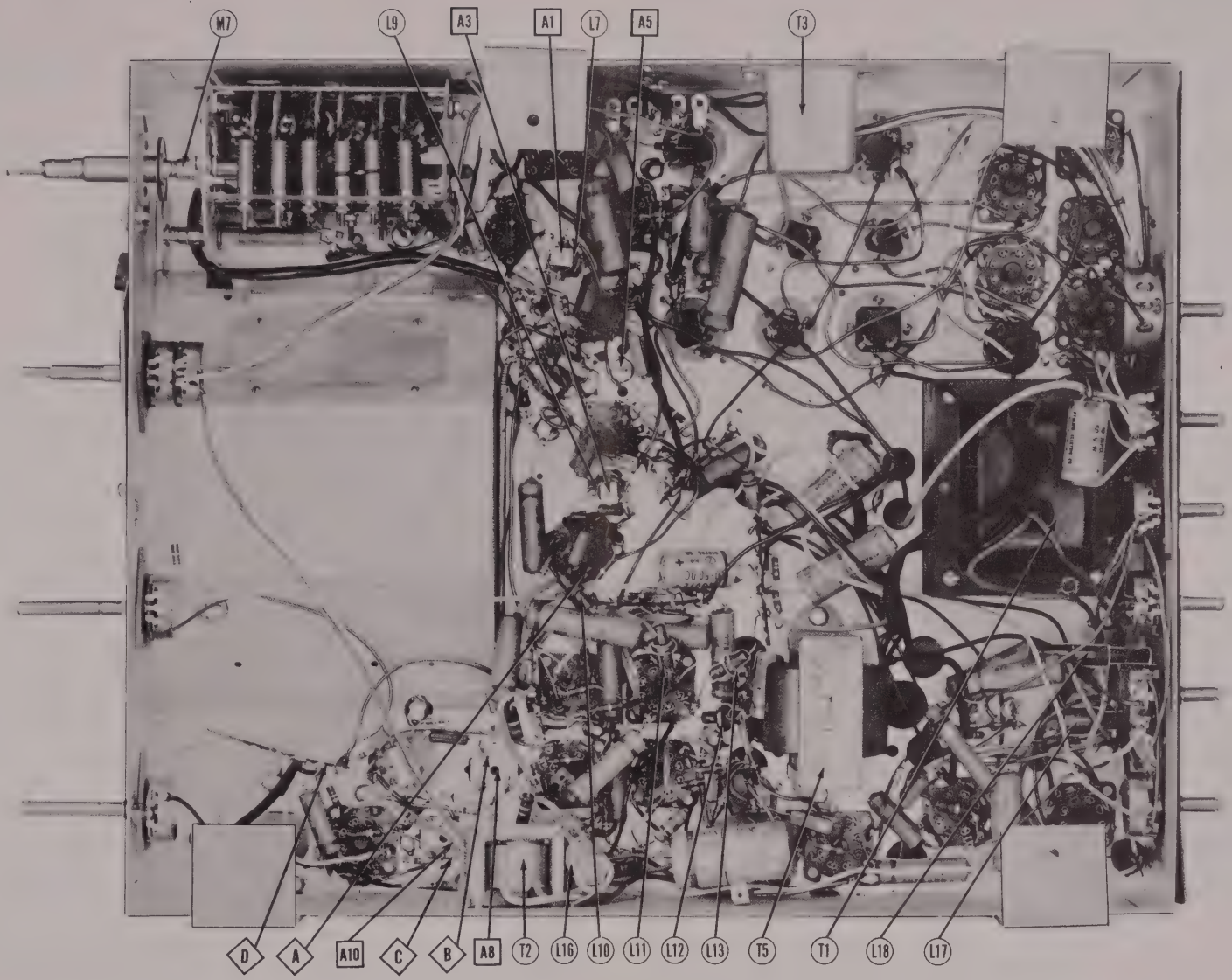
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-7 SET #61 FOLDER 7

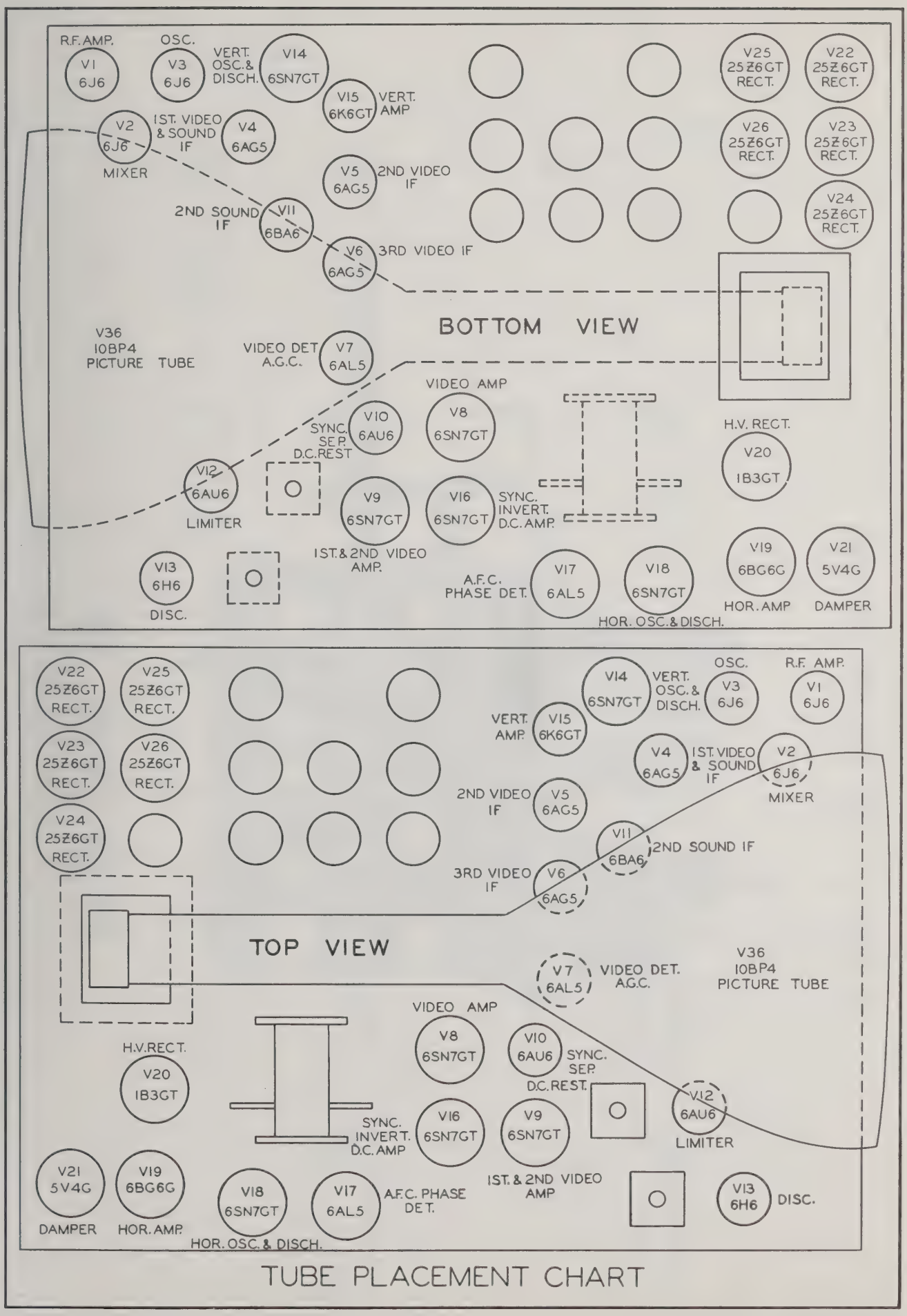

EMERSON
MODEL 585
RF AMP 6J6
MIXER 6J6
OSC 6J6
2ND SOUND IF AMP 6BA6
LIMITER 6AU6
DISCRIMINATOR 6H6
TO RADIO CHASSIS
1ST VIDEO & SOUND IF AMP 6AG5
2ND VIDEO IF AMP 6AG5
3RD VIDEO IF AMP 6AG5
VIDEO DET. AGC 6AL5
VIDEO AMP 6SN7GT
SYNC AMP ½6SN7GT
SYNC SEP & DC RESTORER 6AU6
SYNC AMP ½6SN7GT
RECTIFIER 25Z6GT
FOCUS CONTROL
FOCUS COIL
VERT BLOCKING OSC-DISCHARGE 6SN7GT
VERT SIZE CONTROL 2MEG
VERT. HOLD CONTROL 1 MEG
VERT. AMP 6K6GT
VERT LIN. CONTROL
SYNC INV ½6SN7GT
AFC PHASE DET 6AL5
DC AMP ½6SN7GT
HORIZ BLOCKING OSC-DISCHARGE 6SN7GT
6BG6G
HORIZ DRIVE CONTROL
50K HORIZ HOLD CONTROL
HI-VOLT RECTIFIER 1B3GT
5V4G
HORIZ SIZE
HORIZ LIN
REACTION DAMPER
DEFLECTION YOKE
RED
YEL
WHITE
BLUE
VERT CENT CONTROL
HORIZ CENT CONTROL
CONTRAST CONTROL
BRIGHTNESS CONTROL
10BP4
PICTURE TUBE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1949
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE



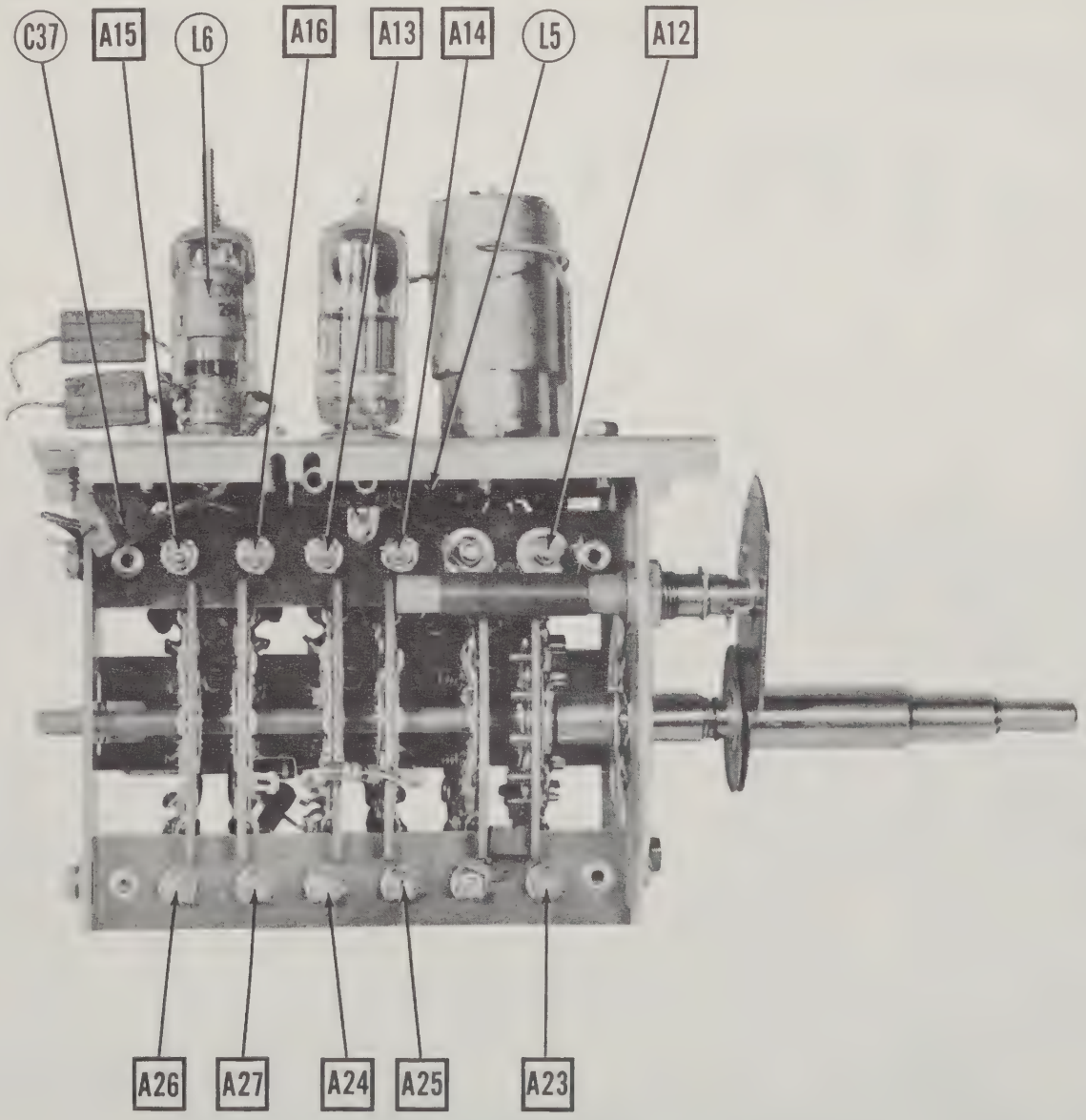
CHASSIS TOP VIEW



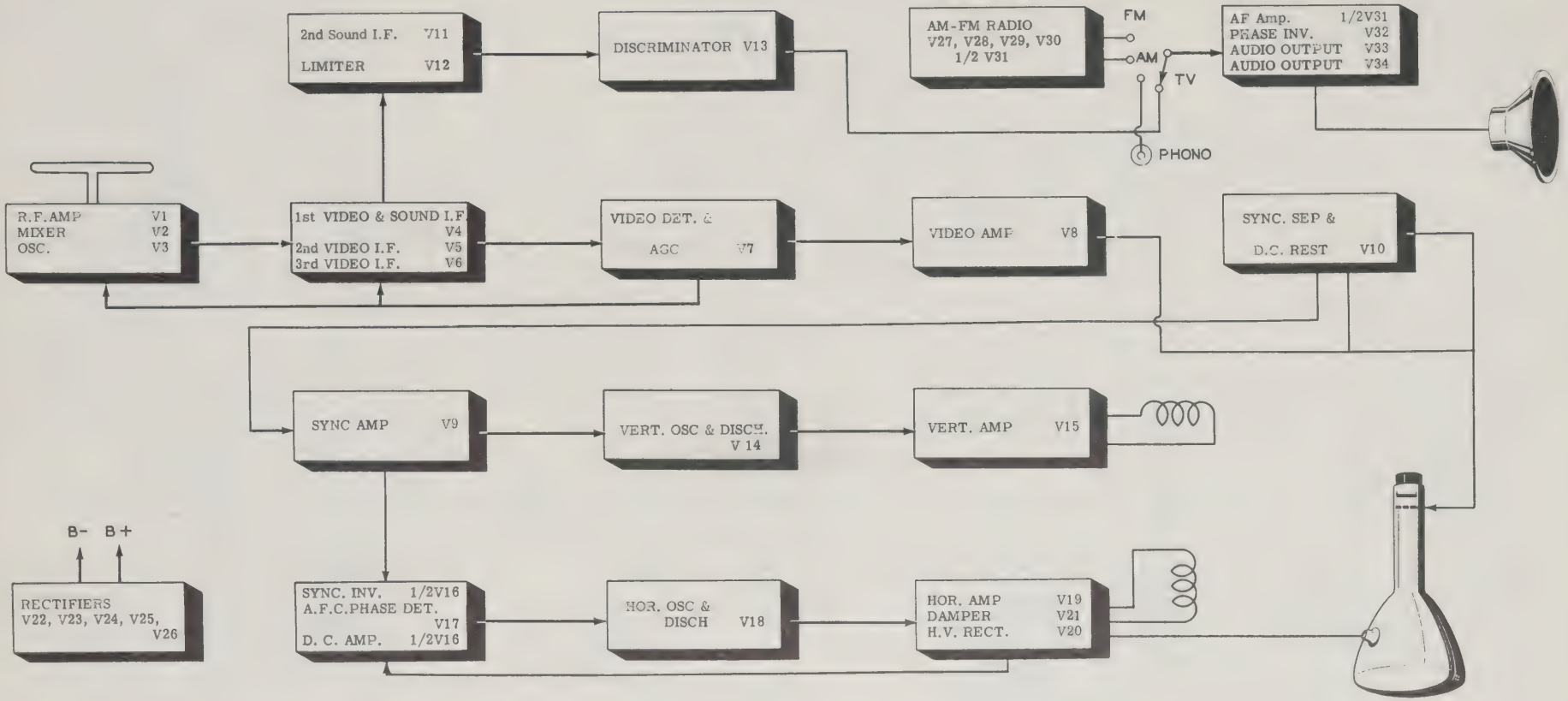
CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART



RF TUNER-LEFT SIDE



BLOCK DIAGRAM

ALIGNMENT INSTRUCTIONS

TV ALIGNMENT

Remove the horizontal Osc. tube (V18) to disable the high voltage.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	5000MMF	High side to one antenna terminal. Low side to chassis.	21.25MC (Unmodulated)	3	DC Probe to point A. Common to chassis.	A1, A2	Adjust for minimum deflection.
2.	5000MMF	"	27.25MC	3	"	A3	"
3.	5000MMF	"	23.0 MC	3	"	A4	Adjust for maximum deflection.
4.	5000MMF	"	25.25MC	3	"	A5	"
5.	5000MMF	"	23.4 MC	3	"	A6	"
6.	5000MMF	"	24.5 MC	3	"	A7	"
7.	Repeat Steps 1 and 2.						Remove VTVM.

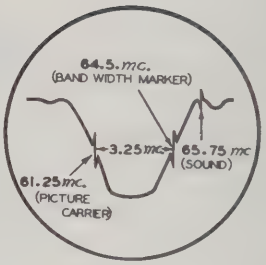


FIG. 1

OVERALL VIDEO IF RESPONSE CHECK

Waveforms shown may be inverted depending on the number of amplifying stages in the vertical amplifier of the particular scope being used.

The marker pip signal required in Steps 9, 10 and 11 is coupled to one of the dipole terminals. This signal should be unmodulated and derived from an accurately calibrated signal generator. Attenuate the signal so that a small "pip" is visible. A strong signal will cause undesirable AGC action and will distort or swamp the picture.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to one antenna terminal. Low side to chassis	63MC (Freq.Mod 10MC Sweep)		3	Vertical input to Point A in series with 22KΩ carbon resistor. Low side to chassis.		Leave sweep signal generator at this setting throughout Steps 9-12.
9.	Direct	High side of marker gen. to other antenna terminal. Low side to chassis.	"	65.75MC	3	"		Adjust fine tuning control for placement of marker pip as shown in Fig. 1. Leave at this setting for Steps 10, 11 & 12
10	Direct	"	"	61.25MC	3	"	A5	Adjust for placement of marker pip as shown in Fig. 1.
11	Direct	"	"	64. 5MC	3	"	A4	"
12	Direct	"	"		3	"	A6, A7	Make minor adjustments, if necessary, for proper slope shape and band width per Fig. 1.

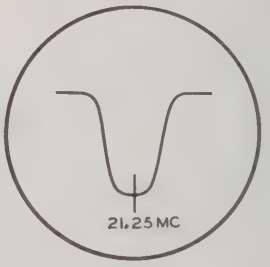


FIG. 2

SOUND IF ALIGNMENT

Loosely couple the signal from the marker generator to the input by placing output lead near the FM signal generator output lead. Use only enough signal to give visible pip. Set marker generator to produce a 21.25MC unmodulated signal for use in Steps 13-16 inclusive.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13	5000MMF	High side to Pin #1 of 1st Video IF Amp. V4. Low side to chassis.	21.25MC (Freq. Mod.600KC Sweep)	3	Vertical input to Point B. Low side to chassis.	A8, A9	Adjust for maximum amplitude and symmetry with marker pip at peak of curve per Fig. 2.
14	5000MMF	"	"	3	"	A1	"
15	5000MMF	"	"	3	Vertical input to Point C. Low side to chassis.	A10	Adjust for maximum amplitude and symmetry with marker pip at peak of curve per Fig. 2.
16	5000MMF	"	"	3	Vertical input to Point D. Low side to chassis.	A11	Adjust for maximum straightness of diagonal line with marker pip at center of line per Fig. 3. Continue with Step 17.

SOUND IF ALIGNMENT USING VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13	5000MMF	High side to pin #1 of 1st Video IF Amp. V4. Low side to chassis.	21.25MC (Unmodulated)	3	DC Probe to Point B.Common to chassis.	A8, A9, A1	Adjust for maximum deflection.
14	5000MMF	"	"	3	DC Probe to Point C.Common to chassis.	A10	"
15	5000MMF	"	"	3	DC Probe to Point D.Common to chassis.	A11	Adjust for zero reading. (Make certain readings of opposite polarity are obtained on each side of zero setting.)
16	5000MMF	"	Tune 75KC above and below 21.25MC and note meter readings.	3	"	A10	Adjust A10, if necessary, for equal readings (opposite polarity) 75KC above and below 21.25MC.

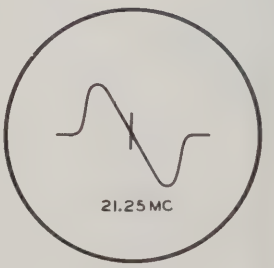


FIG. 3

TV-RF ALIGNMENT CHANNELS 2-13

Set fine tuning control to a position approximately 140° from its full counter-clockwise position. This aligns the holes in the drive disc with the adjustment screws on the oscillator switch wafer. Do not change this setting during entire RF alignment. See Fig. 4.

Attenuate signal from marker generator to give as small a "pip" as possible to prevent AGC action.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17	300Ω carbon res.	High side to one ant. terminal. Low side to chassis. High side of marker gen. to other ant. terminal. Low side to chassis.	213MC (Freq. Mod 10MC Sweep)	215.75MC	13	Vertical input to Point A in series with 22KΩ carbon resistor. Low side to chassis.	A12	Adjust for placement of sound marker per Fig. 1.
18	300Ω carbon res.	"	"	"	13	"	A13, A14 A15, A16	Adjust for shaping to conform to Fig. 1.
19	300Ω carbon res.	"	207MC (Freq. Mod 10MC Sweep)	209.75MC	12	"	A17	Adjust for placement of sound marker per Fig. 1.
20	300Ω carbon res.	"	201MC (Freq. Mod 10MC Sweep)	203.75MC	11	"	A18	"
21	300Ω carbon res.	"	195MC (Freq. Mod 10MC Sweep)	197.75MC	10	"	A19	"
22	300Ω carbon res.	"	189MC (Freq. Mod 10MC Sweep)	191.75MC	9	"	A20	"
23	300Ω carbon res.	"	183MC (Freq. Mod 10MC Sweep)	185.75MC	8	"	A21	"
24	300Ω carbon res.	"	177MC (Freq. Mod 10MC Sweep)	179.75MC	7	"	A22	"
25	300Ω carbon res.	"	85MC (Freq. Mod 10MC Sweep)	87.75MC	6	"	A23	Adjust for placement of sound marker per Fig. 1.
26	300Ω carbon res.	"	"	"	6	"	A24, A25, A26, A27	Adjust for shaping to conform to Fig. 1.
27	300Ω carbon res.	"	79MC (Freq. Mod 10MC Sweep)	81.75MC	5	"	A28	Adjust for placement of sound marker per Fig. 1.
28	300Ω carbon res.	"	69MC (Freq. Mod 10MC Sweep)	71.75MC	4	"	A29	"
29	300Ω carbon res.	"	63MC (Freq. Mod 10MC Sweep)	65.75MC	3	"	A30	"
30	300Ω carbon res.	"	57MC (Freq. Mod 10MC Sweep)	59.75MC	2	"	A31	"

INTERFERENCE TRAP ADJUSTMENTS

31 Wave traps A33 and A34 are used for specific types of interference and their alignment will depend upon the type encountered. With the receiver tuned to the channel having the interference, set fine tuning control until interference is maximum. Adjust A33 and A34 for minimum interference in the picture and sound keeping the cores at approximately same relative position. Turn one core 1/2 turn; adjust the other for minimum interference.

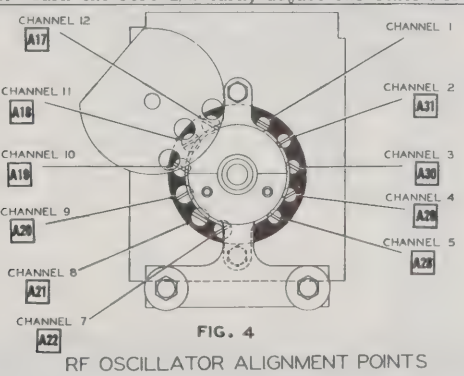


FIG. 4

RF OSCILLATOR ALIGNMENT POINTS

RADIO ALIGNMENT

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The dial backplate bears reference marks for alignment frequencies, the top row for AM and the bottom row for FM. These marks are: for AM, end limit, 600KC and 1500KC, for FM, 90MC, 99MC, 106MC and 108MC. To set pointer turn tuning cap. fully closed and set pointer to end limit mark.

Use isolation transformer if available. If not, connect a .1 MFD capacitor in series with low side of signal generator and chassis.

Use insulated alignment screwdriver for all adjustments.

AM ALIGNMENT

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
32.	.1 MFD	High side to Pin 8 (grid) of 6SB7Y (V27). Low side to chassis.	455KC	BC (fully counter clock-wise)	Tuning cap fully open.	Across Voice Coil	A35, A36, A37, A38	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
33.		Loop	1500KC	"	1500KC reference mark on dial backplate.	"	A39	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
34.		"	"	"	Tune for maximum output.	"	A40	Adjust for maximum output.

ALIGNMENT INSTRUCTIONS (CONT.)

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
35.	.01 MFD	High side to Pin 4 (grid) of 6SG7 2nd IF tube (V29). Low side to chassis.	10.7MC (Unmodulated)	FM (fully clockwise)	Tuning cap. fully open.	DC Probe to Point E. Common to chassis.	A41, A42	Adjust for maximum deflection.
36.	.01 MFD	High side to Pin 4 (grid) of 6SG7 1st IF tube (V28). Low side to chassis.	"	"	"	"	A43, A44	"
37.	.01 MFD	High side to Pin 8 (grid) of 6SB7Y. Low side to chassis.	"	"	"	"	A45, A46	"
38.	.01 MFD	High side to Pin 4 (grid) of 6SG7 2nd IF tube (V29). Low side to chassis.	"	"	"	DC Probe to Point F. Common to chassis.	A47	"
39.	.01 MFD	"	"	"	"	DC Probe to Point G. Common to chassis.	A48	Adjust for zero deflection. Continue with FM-RF Alignment in Step 40.

FIG. 5

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

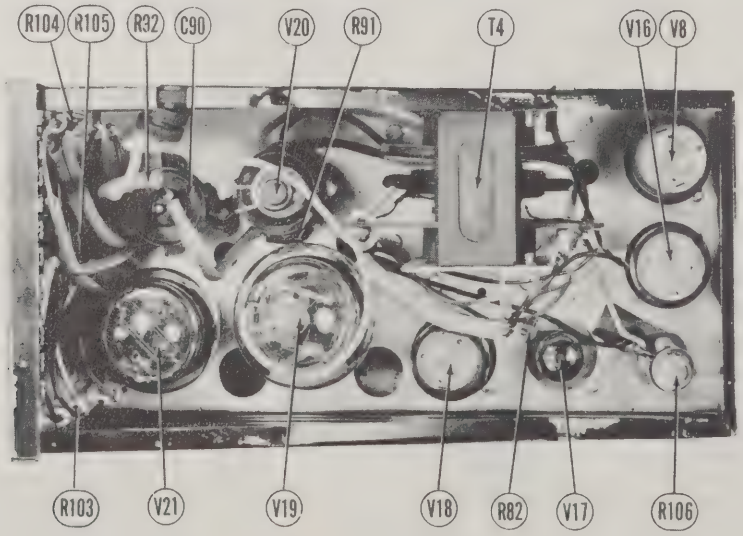
Use frequency modulated signal with 60\ modulation and 450KC sweep. Use 120\ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
35.	.01 MFD	High side to Pin 4 (grid) of 6SG7 1st IF tube (V28). Low side to chassis.	10.7MC (Freq. Modulated)	FM	Tuning cap fully open.	Vertical input to Point E. Ground to chassis.	A41, A42, A43, A44	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 5.
36.	.01 MFD	Disconnect FM Ant. Coil (L20) from Pin 8 (grid) of 6SB7Y. Shunt 100KΩ from Pin 8 to chassis. High side to Pin 8. Low side to chassis.	"	"	"	"	A45, A46	Adjust for maximum amplitude, symmetry and coincidence of patten per Fig. 5. Remove 100KΩ resistor and reconnect FM Ant. Coil (L20) to Pin 8 of 6SB7Y.
37.	.01MFD	High side to Pin 4 (grid) of 6SG7 1st IF tube (V28) Low side to chassis.	"	"	"	Vertical input to Point G. Ground to chassis.	A47, A48	Alternately adjust A47 for maximum amplitude and A48 for maximum straightness of crossover lines with crossover occuring at center of pattern per Fig. 6. Continue with FM-RF Alignment Step 40.

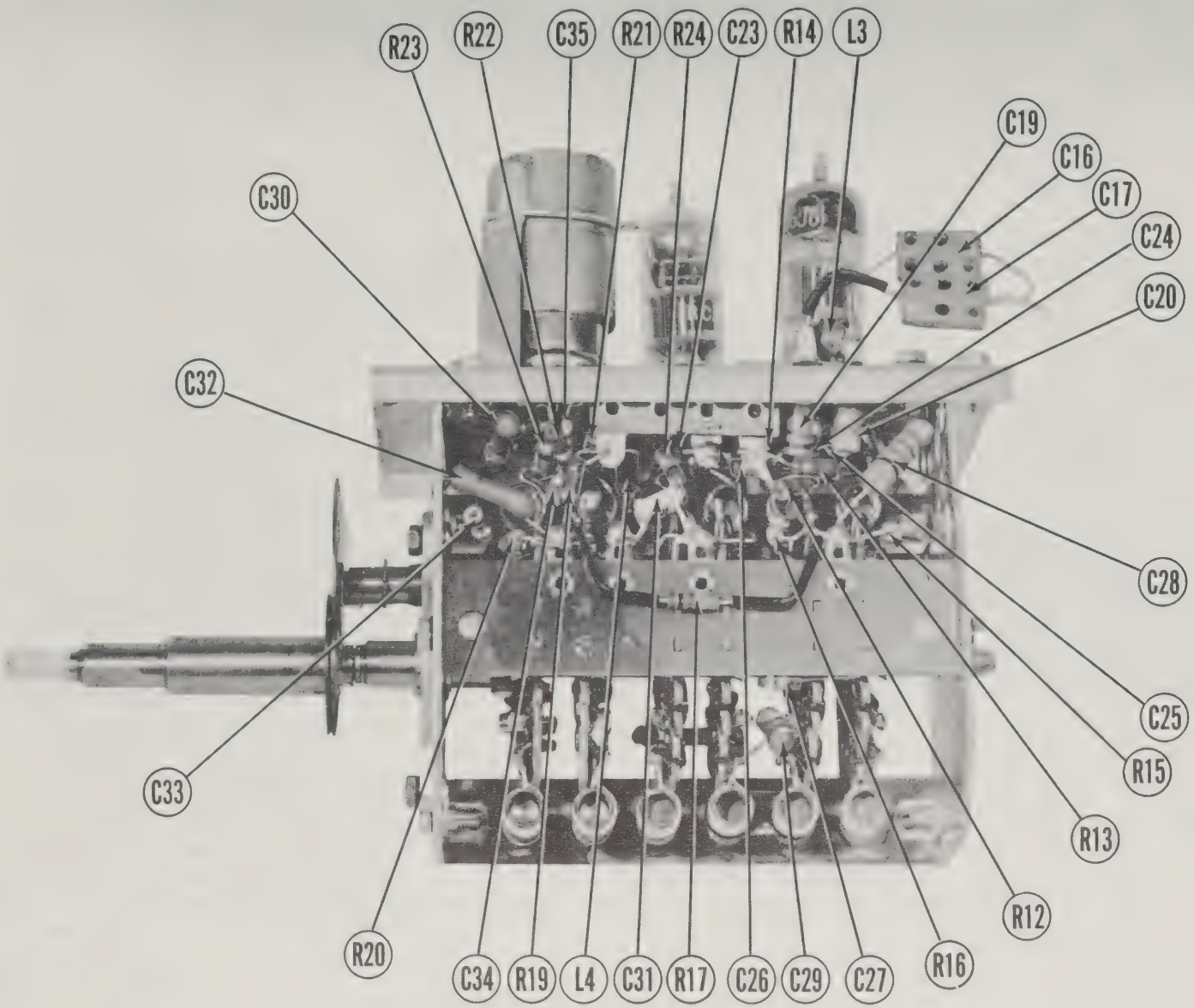
FIG. 6

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
40.	300Ω carbon res.	High side to FM Ant. terminal "A". Low side to chassis.	108MC (unmodulated)	FM	108MC reference mark on dial backplate.	DC Probe to Point E. Common to chassis.	A49	Adjust for maximum deflection.
41.	300Ω carbon res.	"	106MC	"	Tune for maximum deflection.	"	A50	"



HIGH VOLTAGE SUPPLY - TOP VIEW



RF TUNER-RIGHT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	95VDC	95VDC	6.3VAC	0V	-.5VDC	-.5VDC	0V		
V 2	6J6	135VDC	135VDC	6.3VAC	0V	-1.3VDC	-1.7VDC	0V		
V 3	6J6	70VDC	70VDC	6.3VAC	0V	§ -3.5VDC	§-5VDC	.2VDC		
V 4	6AG5	0V	.7VDC	0V	6.3VAC	115VDC	115VDC	.7VDC		
V 5	6AG5	-.8VDC	.2VDC	0V	6.3VAC	115VDC	115VDC	.2VDC		
V 6	6AG5	0V	1.2VDC	0V	6.3VAC	125VDC	120VDC	1.2VDC		
V 7	6AL5	.9VDC	-2.8VDC	0V	6.3VAC	0V	0V	-.3VDC		
V 8	6SN7GT	.2VDC	215VDC	12VDC	-.4VDC	110VDC	0V	6.3VAC	0V	
V 9	6SN7GT	-.5VDC	70VDC	0V	-.4VDC	65VDC	0V	6.3VAC	0V	
V 10	6AU6	0V	0V	0V	6.3VAC	90VDC	120VDC	3.8VDC		
V 11	6BA6	0V	0V	0V	6.3VAC	110VDC	115VDC	1VDC		
V 12	6AU6	-.2VDC	0V	0V	6.3VAC	115VDC	85VDC	0V		
V 13	6H6	0V	0V	-.2VDC	0V	-.2VDC	0V	6.3VAC	0V	
V 14	6SN7GT	† -145VDC	-120VDC 5VDC	†0V	† -145VDC	† 225VDC	†0V	6.3VAC	0V	
V 15	6K6GT	0V	0V	† 260VDC	† 260VDC	†0V	†33VDC	6.3VAC	†3.2VDC 33VDC†	
V 16	6SN7GT	†0V	† 320VDC	† 17VDC	† .8VDC	† 26VDC	†1.5VDC	6.3VAC	0V	
V 17	6AL5	†.8VDC	† .8VDC	0V	6.3VAC	† 20VDC	0V	† -22VDC		
V 18	6SN7GT	†-45VDC	† 300VDC	†0V	† -45VDC	† 90VDC	†0V	6.3VAC	0V	
V 19	6BG6G	0V	0V	†9.4VDC	†0V	† -4VDC	†0V	6.3VAC	† 230VDC	‡
V 20	1B3GT	DO NOT MEASURE								
V 21	5V4G	0V	‡ 380VAC	0V	† 330VDC	0V	† 330VDC	0V	† 380VDC	
V 22	25Z6GT	0V	70VAC	0V	145VAC	145VAC	0V	45VAC	215VDC	
V 23	25Z6GT	0V	45VAC	0V	145VAC	145VAC	0V	25VAC	215VDC	
V 24	25Z6GT	0V	0V	0V	145VAC	145VAC	0V	25VAC	215VDC	
V 25	25Z6GT	0V	95VAC	-225VDC	145VAC	145VAC	0V	70VAC	0V	
V 26	25Z6GT	0V	95VAC	-225VDC	145VAC	145VAC	0V	120VAC	0V	
V 27	6SB7Y	0V	33VAC	95VDC	90VDC	§-6VDC	0V	40VAC	-.3VDC	
V 28	6SG7	0V	26VAC	0V	-.5VDC	0V	95VDC	33VAC	95VDC	
‡ V 29	6SG7	0V	26VAC	0V	-.4VDC	0V	80VDC	19VAC	80VDC	
‡ V 30	6SH7	0V	12VAC	0V	-.4VDC	0V	22VDC	19VAC	65VDC	
‡ V31A	6S8GT	-.6VDC	0V	-.8VDC	-.4VDC	-.2VDC	40VDC	0V	6.3VAC	
V31B	6S8GT	-.6VDC	0V	-.4VDC	-.4VDC	0V	40VDC	0V	6.3VAC	
V32	6AT6	0V	.8VDC	6.3VAC	12VAC	0V	0V	85VDC		
V33	25L6GT	90VDC	40VAC	110VDC	100VDC	0V	110VDC	65VAC	10VDC	
V34	25L6GT	0V	65VAC	105VDC	100VDC	0V	85VDC	90VAC	10VDC	
V35	25Z5GT	115VDC	117VAC	117VAC	115VDC	117VAC	100VDC	90VAC	115VDC	
V36	10BP4	0V	.7VDC	PIN 10 225VDC	PIN 11 125VDC	PIN 12 6.3VAC				

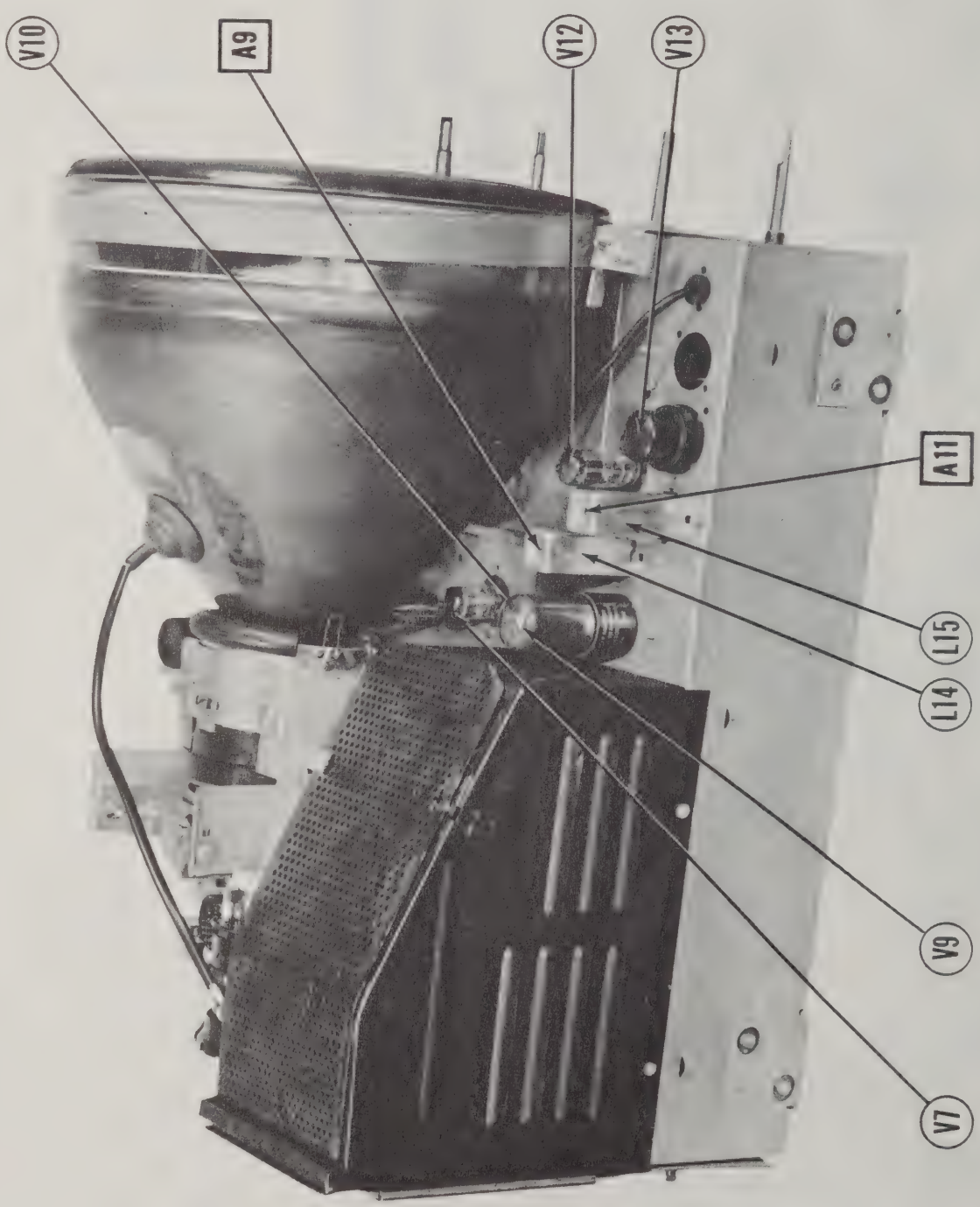
† Measured from pin 6 of V14
‡ Do not measure
§ Taken with vacuum tube voltmeter.
‡ Taken in FM position

RESISTANCE READINGS

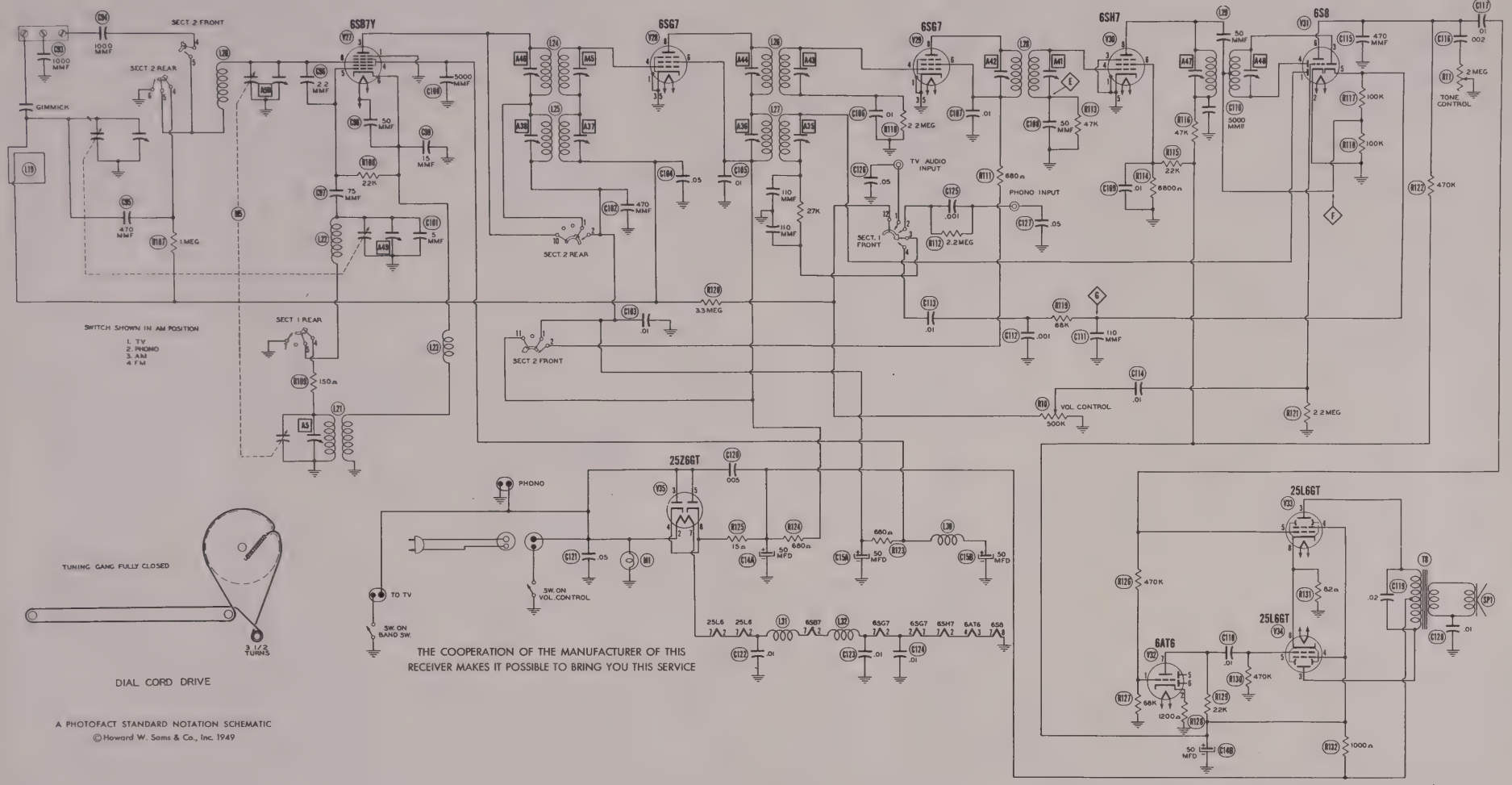
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	* 6KΩ	* 6KΩ	.2Ω	0Ω	3.5Meg.	3.5 Meg.	0Ω		
V 2	6J6	* 1500Ω	* 1500Ω	.2Ω	0Ω	1 Meg.	1 Meg.	0Ω		
V 3	6J6	* 5KΩ	* 5KΩ	.2Ω	0Ω	100KΩ	100KΩ	47Ω		
V 4	6AG5	10KΩ	82Ω	0Ω	.2Ω	* 1.8KΩ	* 1.8KΩ	82Ω		
V 5	6AG5	3.5 Meg.	33Ω	0Ω	.2Ω	* 1.8KΩ	* 1.8KΩ	33Ω		
V 6	6AG5	10KΩ	150Ω	0Ω	.2Ω	* 6.5KΩ	* 1.8KΩ	150Ω		
V 7	6AL5	100KΩ	4.7KΩ	0Ω	.2Ω	.2Ω	0Ω	2.2 Meg.		
V 8	6SN7GT	1 Meg.	* 15KΩ	10KΩ	1 Meg.	* 2KΩ	0Ω	.2Ω	0Ω	
V 9	6SN7GT	1 Meg.	* 20KΩ	0Ω	1 Meg.	* 22KΩ	0Ω	.2Ω	0Ω	
V 10	6AU6	1 Meg.	0Ω	0Ω	.2Ω	* 230Ω	* 800Ω	22KΩ		
V 11	6BA6	0Ω	0Ω	0Ω	.2Ω	* 1.8KΩ	* 1.8KΩ	68Ω		
V 12	6AU6	47KΩ	0Ω	0Ω	.2Ω	* 1.8KΩ	* 13KΩ	0Ω		
V 13	6H6	0Ω	0Ω	100KΩ	200KΩ	100KΩ	Inf.	.2Ω	0Ω	
V 14	6SN7GT	†1.5Meg.	*2.5Meg. 470KΩ*	†0Ω	†1.5Meg.	* 100KΩ	† 0Ω	.2Ω	0Ω	
V 15	6K6GT	Inf.	0Ω	* 10KΩ	* 10KΩ	†5 Meg.	10KΩ	.2Ω	†300Ω 5KΩ†	
V 16	6SN7GT	†1 Meg.	* 2.2KΩ	†2.2KΩ	Inf.	* 100KΩ	† 1000Ω	.2Ω	0Ω	
V 17	6AL5	Inf.	Inf.	0Ω	.2Ω	† 150KΩ	0Ω	†150KΩ		
V 18	6SN7GT	180KΩ	* 4.5KΩ	†0Ω	180KΩ	* 470KΩ	† 0Ω	.2Ω	0Ω	
V 19	6BG6G	Inf.	0Ω	†100Ω	†0Ω	† 470KΩ	† 0Ω	.2Ω	* 10KΩ	* 7.5KΩ
V 20	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	* 8KΩ
V 21	5V4G	Inf.	* 7.5KΩ	Inf.	* 150Ω	Inf.	* 150Ω	Inf.	* 7.5KΩ	
V 22	25Z6GT	Inf.	19Ω	0Ω	250KΩ	250KΩ	Inf.	19Ω	750KΩ	
V 23	25Z6GT	Inf.	19Ω	0Ω	250KΩ	250KΩ	Inf.	13Ω	750KΩ	
V 24	25Z6GT	Inf.	0Ω	0Ω	250KΩ	250KΩ	Inf.	13Ω	750KΩ	
V 25	25Z6GT	Inf.	15Ω	4KΩ	7 Meg.	7 Meg.	Inf.	19Ω	0Ω	
V 26	25Z6GT	Inf.	15Ω	4KΩ	7 Meg.	7 Meg.	Inf.	2.5Ω	0Ω	
V 27	6SB7Y	0Ω	20Ω	** 700Ω	** 1300Ω	22KΩ	.5Ω	23Ω	5 Meg.	
V 28	6SG7	0Ω	15Ω	0Ω	4 Meg.	0Ω	** 700Ω	20Ω	** 700Ω	
‡ V 29	6SG7	0Ω	15Ω	0Ω	2.2 Meg.	0Ω	** 1500Ω	12Ω	** 1500Ω	
‡ V 30	6SH7	0Ω	7Ω	0Ω	47KΩ	0Ω	** 22KΩ	12Ω	** 50KΩ	
‡ V31A	6S8GT	Inf.	0Ω	100KΩ	100KΩ	200KΩ	** 470KΩ	0Ω	3Ω	
V31B	6S8GT	550KΩ	0Ω	100KΩ	100KΩ	200KΩ	** 470KΩ	0Ω	3Ω	
V32	6AT6	68KΩ	1200Ω	3Ω	7Ω	Inf.	Inf.	** 22KΩ		
V33	25L6GT	30KΩ	24Ω	** 90Ω	** 1000Ω	580KΩ	** 15Ω	32Ω	82Ω	
V34	25L6GT	Inf.	32Ω	** 100Ω	** 1000Ω	470KΩ	** 22KΩ	36Ω	82Ω	
V35	25Z6GT	30KΩ	45Ω	45Ω	30KΩ	45Ω	30KΩ	38Ω	30KΩ	
V36	10PB4	0Ω	1 Meg.	PIN 10 *10KΩ	PIN 11 *800Ω	PIN 12 .2Ω				

* Measured from pin 8 of V22
** Measured from pin 8 of V35
† Measured from pin 6 of V14

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

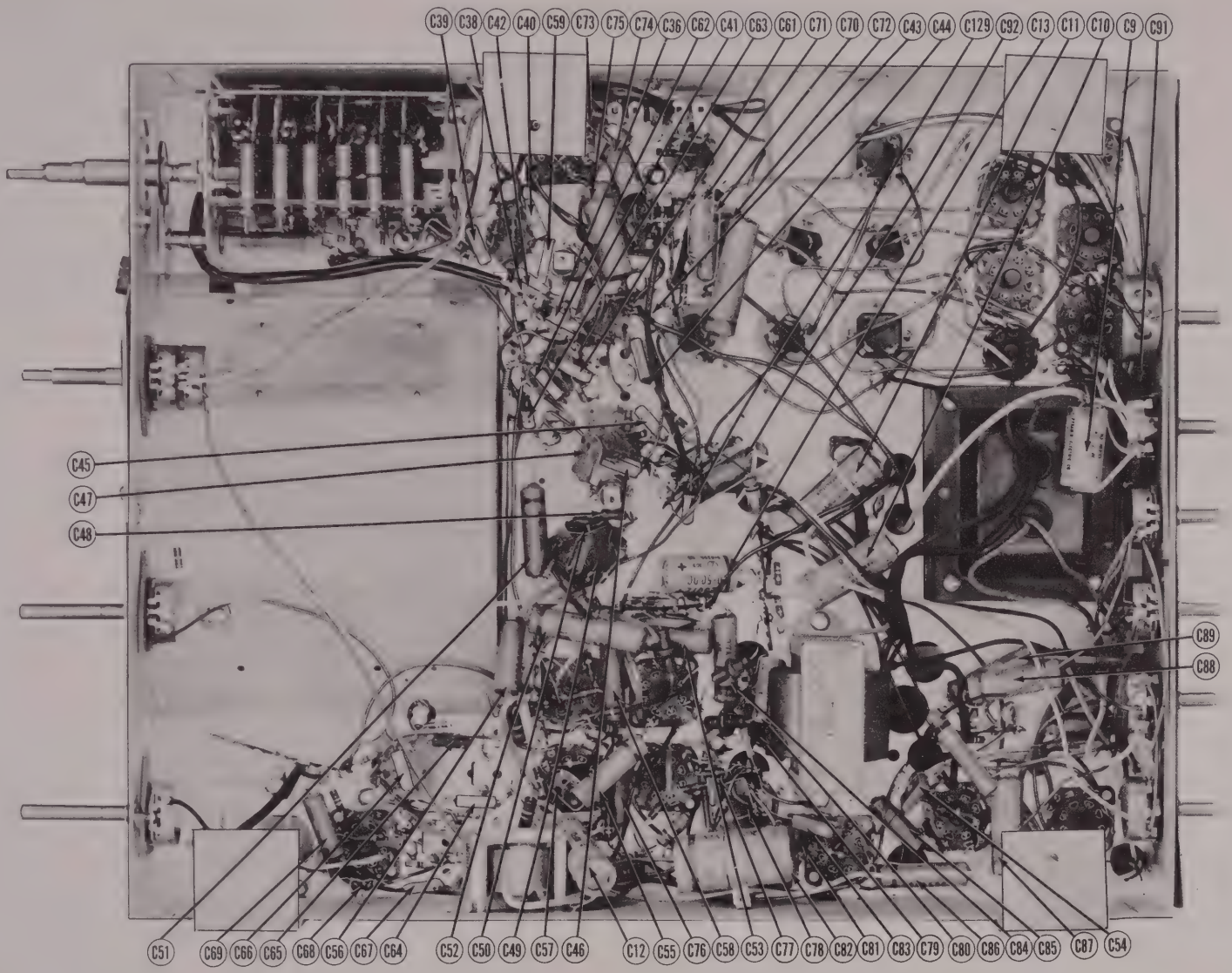


CHASSIS TOP VIEW

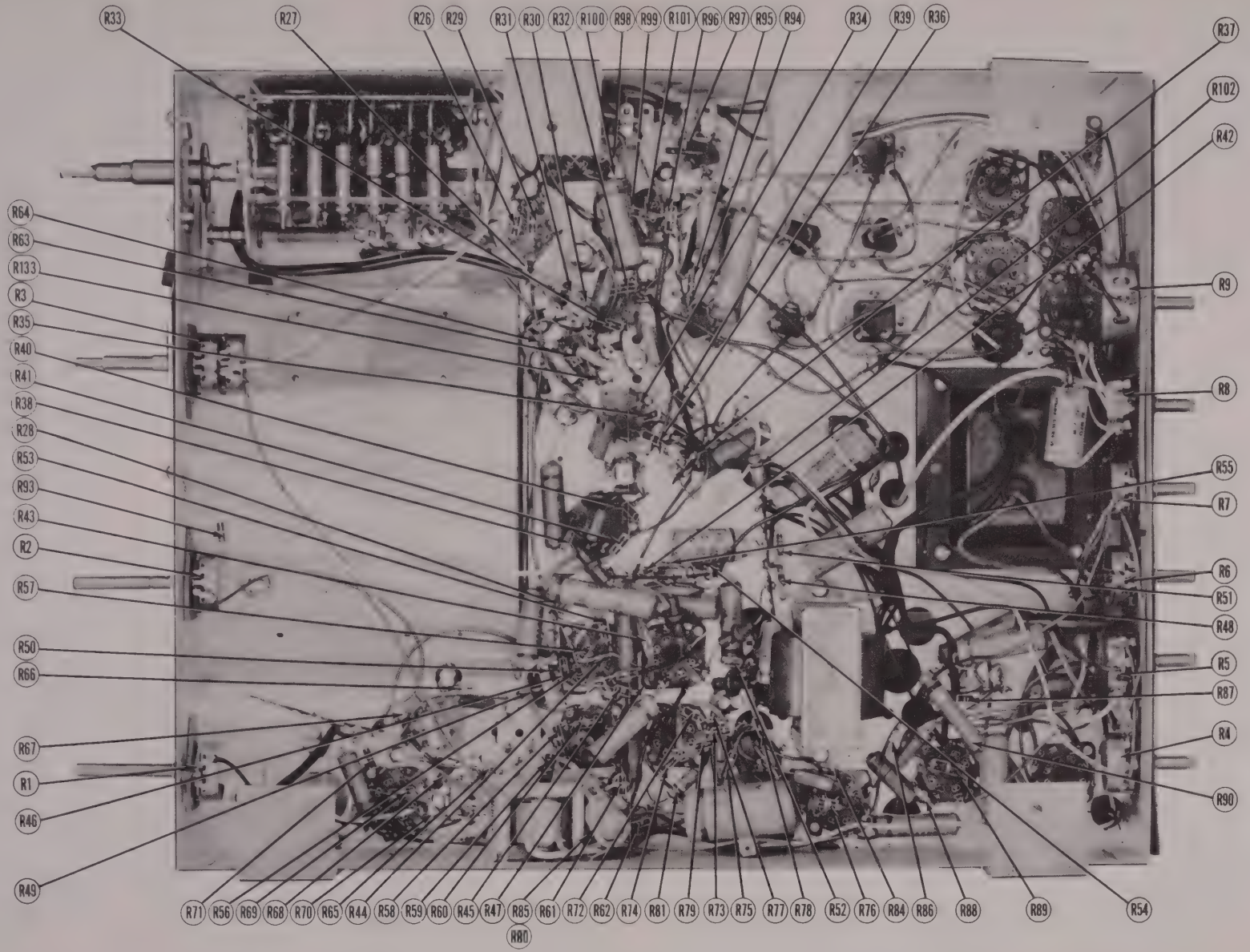


A PHOTOFACT STANDARD NOTATION SCHEMATIC

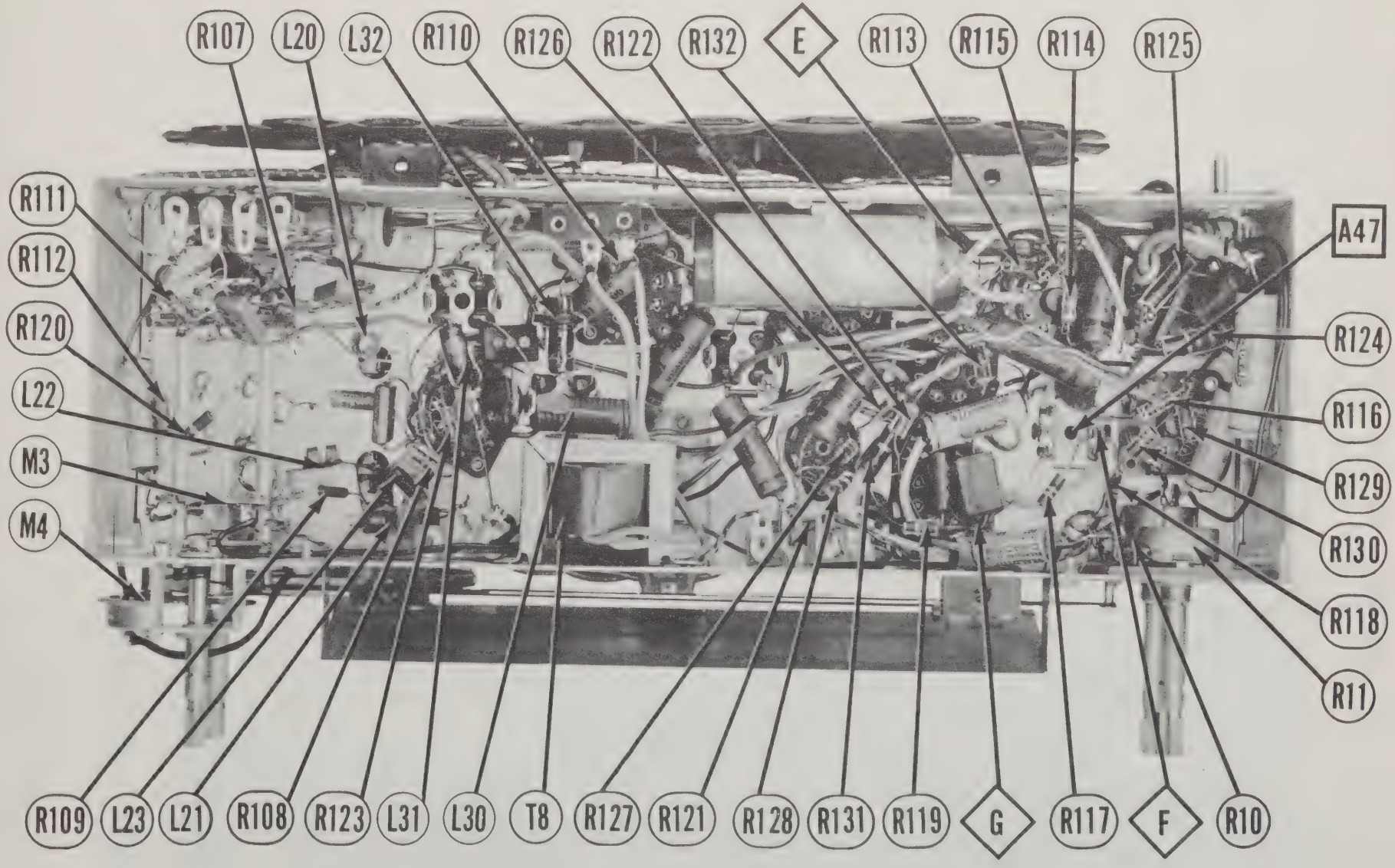
© Howard W. Sams & Co., Inc. 1949



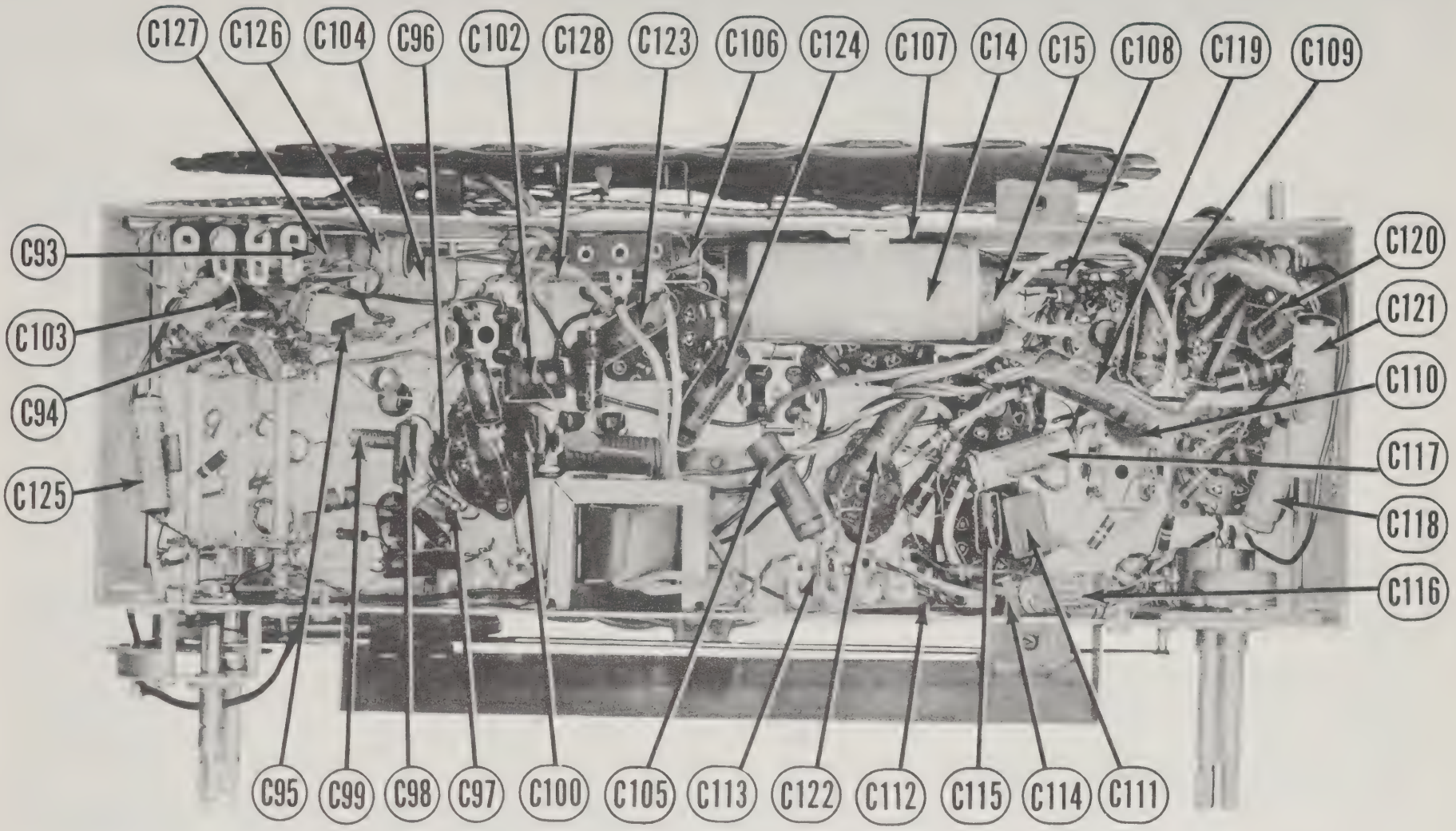
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



AM-FM CHASSIS - BOTTOM VIEW



AM-FM CHASSIS-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	1st Video Sound IF	[illegible]	[illegible]	[illegible]	
V2	2nd Video IF	[illegible]	[illegible]	[illegible]	
V3	3rd Video IF	[illegible]	[illegible]	[illegible]	
V4	Video Det.-AGC	[illegible]	[illegible]	[illegible]	
V5	Video Amp.	[illegible]	[illegible]	[illegible]	
V6	1st & 2nd Sync.	[illegible]	[illegible]	[illegible]	
V10	Sync. Sep-DC. Restorer	[illegible]	[illegible]	[illegible]	
V11	Rectifier	[illegible]	[illegible]	[illegible]	
V12	Rectifier	[illegible]	[illegible]	[illegible]	
V13	Osc-Discharge	[illegible]	[illegible]	[illegible]	
V19	Horiz. Amp.	[illegible]	[illegible]	[illegible]	
V20	[illegible]	[illegible]	[illegible]	[illegible]	
V21	[illegible]	[illegible]	[illegible]	[illegible]	
V22	[illegible]	[illegible]	[illegible]	[illegible]	
V23	[illegible]	[illegible]	[illegible]	[illegible]	
V24	[illegible]	[illegible]	[illegible]	[illegible]	
V25	[illegible]	[illegible]	[illegible]	[illegible]	
V26	Rectifier	[illegible]	[illegible]	[illegible]	
V27	Rectifier	[illegible]	[illegible]	[illegible]	
V28	Rectifier	[illegible]	[illegible]	[illegible]	
V29	Converter	[illegible]	[illegible]	[illegible]	
V30	[illegible]	[illegible]	[illegible]	[illegible]	
V31	[illegible]	[illegible]	[illegible]	[illegible]	
V32	[illegible]	[illegible]	[illegible]	[illegible]	
V33	[illegible]	[illegible]	[illegible]	[illegible]	
V34	[illegible]	[illegible]	[illegible]	[illegible]	
V35	[illegible]	[illegible]	[illegible]	[illegible]	
V36	[illegible]	[illegible]	[illegible]	[illegible]	
V37	[illegible]	[illegible]	[illegible]	[illegible]	
V38	[illegible]	[illegible]	[illegible]	[illegible]	
V39	[illegible]	[illegible]	[illegible]	[illegible]	
V40	[illegible]	[illegible]	[illegible]	[illegible]	
V41	[illegible]	[illegible]	[illegible]	[illegible]	
V42	[illegible]	[illegible]	[illegible]	[illegible]	
V43	[illegible]	[illegible]	[illegible]	[illegible]	
V44	[illegible]	[illegible]	[illegible]	[illegible]	
V45	[illegible]	[illegible]	[illegible]	[illegible]	
V46	[illegible]	[illegible]	[illegible]	[illegible]	
V47	[illegible]	[illegible]	[illegible]	[illegible]	
V48	[illegible]	[illegible]	[illegible]	[illegible]	
V49	[illegible]	[illegible]	[illegible]	[illegible]	
V50	[illegible]	[illegible]	[illegible]	[illegible]	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TVL-1	Doubler Cap.
C2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TVL-1	Doubler Cap.
C3A	80	300	925086	[illegible]	UP8830	[illegible]	[illegible]	TVL-14	▬ Filter
B	80	300	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	■ Filter
C4A	80	250	925096	[illegible]	UP11CJ	[illegible]	[illegible]	TVL-22	▬ Filter
B	80	250	[illegible]	[illegible]	1043	[illegible]	[illegible]	[illegible]	■ Filter
C	60	200	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▲ Filter
C5	80	250	[illegible]	AF44J *	UP8025	[illegible]	[illegible]	TVL-62	Filter
C6	80	250	925093	AF44J *	UP8025	[illegible]	[illegible]	TVL-62	Filter
C7	80	250	925095	AF44J *	UP8025	[illegible]	[illegible]	TVL-62	Filter
C8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	TVL-15	Hor. Cent. Cont. Bypass
C9	[illegible]	[illegible]	[illegible]	[illegible]	1059	[illegible]	[illegible]	[illegible]	
B	1000	15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Vert. Cent. Cont. Bypass
C9	1	250	925072	PRS50/10	BR105	[illegible]	[illegible]	TVA-14	Vert. Lin. Cont. Bypass
C10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	UT-82	Low Pass Filter
C11	8	250	925111	PRS350/8	BR825	[illegible]	[illegible]	UT-82	Decoupling
C12	8	250	925111	PRS350/8	BR825	[illegible]	[illegible]	UT-82	"
C13	10	50	925072	PRS50/10	BR105	[illegible]	[illegible]	TVA-14	DC Restorer Cath. Byp.
C14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DSB-2X50-150	Filter
C16	[illegible]	[illegible]	[illegible]	[illegible]	-50	[illegible]	[illegible]	[illegible]	"
C17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C18	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	DSB-2X50-150	TA-505
C19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	"
C20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C25	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C27	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C30	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C32	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C35	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C36	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C37	270	500	910015	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	IF Coupling
C38	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C40	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C41	270	500	910015	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	IF Coupling
C42	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C43	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C44	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C47	75	[illegible]	928115	[illegible]	1468-3000	5W5Q7	GP1K-75	MO5.5-47	1FM-475
C48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C49	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C50	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C51	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C52	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C53	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C55	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C56	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C63	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C65	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C66	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C70	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C74	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C76	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C77	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C80	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C81	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C82	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C83	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C84	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C85	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C86	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C87	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C88	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C90	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C91	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C93	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C94	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C95	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C96	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C97	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
C98	50	500	928014	[illegible]	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45
C99	15	[illegible]	928016	[illegible]	[illegible]	[illegible]	GP1K-15	MS-415	Osc. Feedback
C100	5000	[illegible]	928109	[illegible]	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25
C101	5	[illegible]	928017	[illegible]	1469-000005	5R5V5	NP0K-5	MO5.5-55	Fixed Trimmer
C102	470	500	910014	[illegible]	1468-0005	5W5T5	GP2K-500	MO.5-35	RF Bypass
C103	.01	200	920032	[illegible]	P488-01	GT2S1	GP2-335-01	ST-4-01	2nd IF Grid Filter
C104	.05	200	920060	[illegible]	P288-05	GT2S5	[illegible]	ST-4-05	TM-15 AVC Filter
C105	.01	200	920092	[illegible]	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11 RF Bypass
C106	.01	200	920092	[illegible]	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11 2nd IF Grid Filter
C107	.01	200	920092	[illegible]	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11 1st IF Decoupling
C108	50	500	928102	[illegible]	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45 Limiter Grid Filter
C109	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 Limiter Screen Bypass
C110	5000	[illegible]	928109	[illegible]	1467-005	1D5D5	GP2K-005	MW.5-25	1FM-25 Limiter Plate Decoup.
C111	10	500	910010	[illegible]	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31 RF Bypass
C112	.001	600	920514	[illegible]	P688-001	GT6D1	GP2L-001	ST-6-001	TM-21 De-emphasis
C113	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 Audio Coupling
C114	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 "
C115	15	500	910014	[illegible]	1468-0005	5W5T5	GP2K-500	MO.5-35	TM-15 AF Plate Bypass
C116	.002	600	920515	[illegible]	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22 Tone Compensation
C117	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 Audio Coupling
C118	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 "
C119	.02	400	920100	[illegible]	P484-02	GT4S2	[illegible]	ST-4-02	TM-12 Output Plate Bypass
C120	.005	400	920180	[illegible]	P484-005	GT4S5	GP2M-005	ST-4-005	TM-25 Rect. Bypass
C121	.05	400	920030	[illegible]	P488-05	GT4S5	[illegible]	ST-4-05	TM-15 Line Filter
C122	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 Filament Bypass
C123	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 "
C124	.01	400	920090	[illegible]	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11 "
C125	.001	400	[illegible]	[illegible]	P488-001	GT6D1	GP2L-001	ST-6-001	TM-21 Tone Compensation
C126	.05	400	923062	[illegible]	P488-05	GT4S5	[illegible]	ST-4-05	TM-15 Insertion
C127	.05	400	923062	[illegible]	P488-05	GT4S5	[illegible]	ST-4-05	TM-15 "
C128	.01	600	923078	[illegible]	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11 Speaker Isolation
C129	1500	[illegible]	928006	[illegible]	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215 3rd V. IF Screen Byp.

* Install mounting plate.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
R1A	10KΩ	½		D11-116	M-27-S	Contrast Control
B	Shaft			A	Not Req.	Attach to R1A Per Instructions
R2A	100KΩ	½	390032	D11-128	M-49-S	Brightness Control
B	Shaft		Not Req.	A	Not Req.	Attach to R2A Per Instructions
R3A	50KΩ	½	390036			Horiz. Hold Control } Dual Concentric
B	1 Meg.		Not Req.			Vert. Hold Control "
R4	3KΩ	1	390033		43-30CT	Vert. Centering Control
R5	30Ω	1	390033		43-30CT	Horiz. Centering Control
R6A	20KΩ	½	390035	D11-120	M-40-S	Horiz. Drive Control
B	Shaft		Not Req.	A	Not Req.	Attach to R6A Per Instructions
R7A	2 Meg.	½	390038		M-83-S	Vert. Size Control
B	Shaft		Not Req.		Not Req.	Attach to R7A Per Instructions
R8	50Ω	1	390039	W-5000	43-5000	Vert. Linearity Control
R9	1500Ω	4	390007	W-1500	43-1500	Focus Control
R10A	500KΩ	½	390027	D11-133	AF-63-S	Volume Control
B	Shaft		Not Req.	E	KSS-3	Attach to R10A Per Instructions
C	Switch		Not Req.	41	SW-A	Attach to R10A Per Instructions
R11A	2 Meg.	½	390046	D13-139	AF-66-Z	Tone Control
B	Shaft		Not Req.	E	KSS-3	Attach to R11A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: EMERSON PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES: All resistors are ± 10% unless otherwise stated.
R12	150Ω	½	340292		Br.-Grn.-Br. ½ Grid
R13	150Ω	½	340292		Br.-Grn.-Br. "
R14	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red AGC Network
R15	470KΩ	½	340652	BTS-4700	Y1.-V1.-Red RF Plate 20%
R16	470Ω	½	340652	BTS-4700	Y1.-V1.-Red " 20%
R17	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red RF Decoupling 20%
R18	10Ω	½	340732		Br.-Blk.-Or. Mixer Coil Shunt
R19	1000Ω	½	340492		Br.-Grn.-Br. Decoupling
R20	4700Ω	½	350652	BTS-4700	Y1.-V1.-Red Osc. Decoupling 20%
R21	47Ω	½	340172		Y1.-V1.-Blk. Osc. Cathode 20%
R22	100Ω	½	340972		Br.-Blk.-Yl. Osc. Grid 20%
R23	100Ω	½	340972		Br.-Blk.-Yl. " 20%
R24	1 Meg.	½	341212		Br.-Blk.-Grn. Mixer Grid 20%
R25	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red Mixer Decoupling
R26	10KΩ	½	330751	BTS-10K-5%	Br.-Blk.-Or. 1st Video IF Grid 5%
R27	1000Ω	½	340972	BTS-100K	Br.-Blk.-Yl. AGC Network
R28	100KΩ	½	340972	BTS-100K	Br.-Blk.-Yl. "
R29	82Ω	½	340232		Gray-Red-Blk. 1st Video IF Cathode
R30	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red 1st Video IF Decoupling
R31	3900Ω	½	340652	BTS-3900	Or.-White-Red 2nd Video IF Grid
R32	33Ω	½	340132		Or.-Or.-Blk. 2nd Video IF Cathode
R33	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red 2nd Video IF Decoupling
R34	10KΩ	½	330752	BTS-10K-5%	Br.-Blk.-Or. 3rd Video IF Grid 5%
R35	150Ω	½	340292		Br.-Grn.-Br. 3rd Video IF Cathode
R36	5600Ω	½		BTS-5600-5%	Grn.-Blue-Red 3rd Video IF Plate 5%
R37	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red 3rd Video IF Decoupling
R38	4700Ω	½	350652	BTS-4700-5%	Y1.-V1.-Red Video Detector Diode Load 5%
R39	100KΩ	½	340972	BTS-100K	Br.-Blk.-Yl. Delayed AGC Network
R40	2.2 Meg.	½	341292	BTS-2.2 Meg.	Red-Red-Grn. AGC Diode Load
R41	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. AGC Network
R42	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. 1st Video Amp. Grid
R43	22KΩ	½	340812	BTS-22K	Red-Red-Or. Peaking Coil Shunt
R44	15KΩ	½	330532	BTS-15K-5%	Br.-Grn.-Or. 1st Video Amp. Plate 5%
R45	56KΩ	½		BTS-56K	Grn.-Blue-Or. Bias Voltage Divider
R46	56KΩ	½		BTS-56K	Grn.-Blue-Or. "
R47	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. 2nd Video Amp. Grid
R48	3900Ω	½	340652	BTS-3900	Or.-White-Red 2nd Video Amp. Plate 5%
R49	180Ω	½	370312	BW-1-180	Br.-Gray-Br. Bias Network
R50	33Ω	½	340132	BW-½-33	Or.-Or.-Blk. "
R51	3300Ω	½	340612	BTB-3300	Or.-Or.-Red Low Pass Filter
R52	22KΩ	½	340812	BTS-22K	Red-Red-Or. Peaking Coil Shunt
R53	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. DC Restorer Grid
R54	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. Picture Tube Grid
R55	22KΩ	½	340812	BTS-22K	Red-Red-Or. DC Restorer Cathode
R56	140KΩ	½	341032	BTS-140K	Br.-Gray-Or. DC Restorer Plate
R57	47KΩ	½	340892	BTS-47K	Y1.-V1.-Or. "
R58	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. 1st Sync. Amp. Grid
R59	47KΩ	½	370812	BTA-270	Red-Red-Or. 1st Sync. Amp. Plate
R60	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. 2nd Sync. Amp. Grid
R61	10KΩ	½	340732	BTS-10K	Br.-Blk.-Or. 2nd Sync. Amp. Plate
R62	10KΩ	½	340732	BTS-10K	Br.-Blk.-Or. "
R63	68Ω	½	340612		Blue-Gray-Blk. Sound IF Cathode
R64	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red Sound IF Screen
R65	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red Sound IF Decoupling
R66	47KΩ	½	340892	BTS-47K	Y1.-V1.-Or. Limiter Grid
R67	10KΩ	½	340732	BTS-10K	Br.-Blk.-Or. Limiter Screen Dropping
R68	1000Ω	½	340492	BTS-1000	Br.-Blk.-Red Limiter Screen Decoupling
R69	100KΩ	½	340972	BTS-100K	Br.-Blk.-Yl. Disc. Diode Load
R70	100KΩ	½	340972	BTS-100K	Br.-Blk.-Yl. "
R71	68KΩ	½	340932	BTS-68K	Blue-Gray-Or. De-emphasis
R72	1 Meg.	½	341212	BTS-1 Meg.	Br.-Blk.-Grn. Phase Inverter Grid
R73	22000Ω	½	330572	BTS-2200-5%	Red-Red-Red Phase Inverter Cathode 5%
R74	22000Ω	½	330572	BTS-2200-5%	Red-Red-Red Phase Inverter Plate 5%
R75	220KΩ	½	341052	BTS-220K	Red-Red-Yl. Phase Inv. Load
R76	220KΩ	½	341052	BTS-220K	Red-Red-Yl. "
R77	100KΩ	½	330972	BTS-100K-5%	Br.-Blk.-Yl. Pulse Inj. Net 5%
R78	100KΩ	½	330972	BTS-100K-5%	Br.-Blk.-Yl. " 5%
R79	1000Ω	½	330492	BTS-1000-5%	Br.-Blk.-Red DC Amp. Cathode 5%
R80	47KΩ	½	340892	BTS-47K	Y1.-V1.-Or. Phase Shift Resistor
R81	100KΩ	½	360972	BTA-100K	Br.-Blk.-Yl. DC Amp. Plate 5%
R82	470KΩ	½	371132	BTA-470K	Y1.-V1.-Yl. Horiz. Pulse Inj. Network
R83	470KΩ	½	371132	BTA-470K	Y1.-V1.-Yl. "
R84	47KΩ	½	340892	BTS-47K	Y1.-V1.-Or. Horiz. Osc. Grid
R85	47KΩ	½	370652	BTA-47K	Y1.-V1.-Or. Horiz. Osc. Decoupling
R86	470KΩ	½	331152	BTS-470K-5%	Y1.-V1.-Yl. Horiz. Discharge Plate 5%
R87	18KΩ	½	340792	BTS-18K	Br.-Gray-Or. Horiz. Peaking
R88	470KΩ	½	341133	BTS-470K	Y1.-V1.-Yl. Horiz. Amp. Grid
R89	100Ω	½	370252	BW-1-100	Br.-Blk.-Br. Horiz. Amp. Cathode
R90	10KΩ	1	397014	BT-2-10K	Br.-Blk.-Or. Horiz. Amp. Screen
R91	3.3Ω	1	397041	BW-1-3.3	Or.-Or.-Gold Filament Dropping 5%
R92	1 Meg.	½	371212	BTS-1 Meg.	Br.-Blk.-Grn. HV Filter
R93	4700Ω	½	340652	BTS-4700	Y1.-V1.-Red Voltage Divider
R94	22KΩ	½	340812	BTS-22K	Red-Red-Or. Integrator Network
R95	47000Ω	½	340652	BTS-4700	Y1.-V1.-Red "
R96	100KΩ	1	370972	BTA-100K	Br.-Blk.-Yl. Vert. Osc. Decoupling
R97	1.5 Meg.	½	331252	BTS-1.5Meg-5%	Br.-Grn.-Grn. Vert. Osc. Grid 5%
R98	470KΩ	½	341132	BTS-470K	Y1.-V1.-Yl. Vert. Discharge Plate
R99	47000Ω	½	340672	BTS-4700	Y1.-V1.-Red Peaking
R100	4.7 Meg.	½	341372	BTS-4.7 Meg.	Y1.-V1.-Grn. Vertical Amp. Grid
R101	270Ω	½	340352	BW-½-270	Red-V1.-Brn. Vertical Amp. Cathode
R102	10KΩ	1	370732	BTA-10K	Br.-Blk.-Or. Vertical Amp. Decoupling
R103	4250Ω	10	394022		Black-Red-Brown Bias Network
R104	600Ω	5	394021	AB-600	Filter
R105	3300Ω	3	394034	ADA-3500*	Or.-Or.-Br. Focus Coil Shunt
R106	7500Ω	25	394027	DX-7500-5%	Red-Grn.-Or. Deflection Damper Plate 5%
R107	1 Meg.	½	371212	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network 20%
R108	22KΩ	½	340810

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	EMERSON PART No.	IRC PART No.		
R120	3.3 Meg.	½	351330	BTS-3.3 Meg.	Or.-Or.-Grn.	AVC Network
R121	2.2 Meg.	½	351290	BTS-2.2 Meg.	Red-Red-Grn.	AF Grid
R122	470KΩ	½	351130	BTS-470K	Yl.-Vi.-Yl.	AF Plate 20%
R123	680Ω	½	340450	BTS-680	Blue-Gray-Br.	Filter
R124	680Ω	1	370450	BTA-680	Blue-Gray-Br.	"
R125	15Ω	1	330050	BW-1-15	Br.-Grn.-Blk.	Surge Limiter 20%
R126	470KΩ	½	351130	BTS-470K	Yl.-Vi.-Yl.	Output Grid 20%
R127	68KΩ	½	350930	BTS-68K	Blue-Gray-Or.	Phase Inv. Grid 20%
R128	1200Ω	½		BTS-1200	Br.-Red-Red	Phase Inv. Cathode
R129	22KΩ	½	340810	BTS-22K	Red-Red-Or.	Phase Inv. Plate
R130	470KΩ	½	351130	BTS-470K	Yl.-Vi.-Yl.	Output Grid 20%
R131	82Ω	1		BW-1-82	Gray-Red-Blk.	Output Cathode
R132	1000Ω	½	340490	BTS-1000	Br.-Blk.-Red	Filter
R133	1000Ω	½	340490	BTS-1000	Br.-Blk.-Red	3rd Video IF Screen

* Set slider at 330Ω

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	EMERSON PART No.	MEISSNER PART No.	
L1	Interference Trap Coil	0Ω				Part of Tuner Assy. Part # 950049
L2	Interference Trap Coil	0Ω				" " " " " "
L3	Ant. Input	.2ΩCT				" " " " " "
L4	Mixer Grid Chk.	.1Ω				" " " " " "
L5	Fil. Choke	0Ω				" " " " " "
L6	1st Video and Sound IF	.2Ω		720041		
L7	2nd Video and Sound IF	.2Ω	0Ω	720042		
L8	3rd Video IF	.2Ω	0Ω	720043		
L9	4th Video IF	.2Ω	0Ω	720044		
L10	Peaking	4Ω		708093		Inductance-35 Microhenry
L11	Peaking	8.5Ω		708094		" -125 Microhenry
L12	Peaking	11Ω		708095		" -180 Microhenry
L13	Peaking	4Ω		708093		" -35 Microhenry
L14	1st Sound IF	.2Ω	.2Ω	720027		
L15	Disc. Trans.	.5Ω	.5Ω	708008		
L16	Hor. Osc. Grid Choke	50Ω		705009		Inductance-3 Millihenries
L17	Hor. Linearity	35Ω		708003		Slug Adjusted
L18	Hor. Size	0Ω		708082		" "
L19	AM Loop Ant.	.2Ω	1.5Ω	700011		Part # 700021 Alternate
L20	FM Ant.	0Ω		713008		
L21	AM Osc.	.4Ω	7.5Ω	716015	14-1060	
L22	FM Osc.	0Ω		716013		
L23	RF Cath. Chk.	.2Ω		705002		
L24	FM 1st IF	1.5Ω	1.5Ω	720024		
L25	AM 1st IF	14Ω	11Ω	720031		
L26	FM 2nd IF	1.5Ω	1.5Ω	720025		
L27	AM 2nd IF	11Ω		720038		
L28	FM 3rd IF	1.5Ω	1.5Ω	720026		
L29	FM Disc. Trans.	.8Ω	1Ω	708005		
L30	RF Choke	0Ω				
L31	Fil. Choke	1Ω		705011		
L32	Fil. Choke	1Ω		705011		

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	EMERSON PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ 2.07A	125VAC @ 1.2A	5VAC @ 2A	6.1VAC @ 8.1A	730007		PH-40	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE		REPLACEMENT DATA				NOTES
	PRI.	SEC.	EMERSON PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
T2	3Ω	1.3Ω	738008	A-8110		A-3002	Hor. Block Osc. Trans.
T3	150Ω	1400Ω	738004	A-8121	TBO-3	A-4000	Vert. Block Osc. Trans.
T4	420Ω Tap @ 180Ω	SEC. 1 0Ω SEC. 2 7Ω Tap @ .5Ω	739000	A-8117			Hor. Output & HV Trans.
T5	46Ω	5Ω	738011	A-8115	T50-2	A-3035	Vert. Output Trans.
T6A	14Ω		708030	DY-1			Hor. Deflection Yoke
B	58Ω						Vert. Deflection Yoke
T7	250Ω		708141	FC-10			Focus Coil

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	3300Ω	3.1Ω	180Ω	.5Ω	734028	A-3656	RO-304 §	A-2900	§ Drill one new mounting hole.

SPEAKER

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	EMERSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.1Ω	180023	ST-102 MODEL P12-S*	12A6*	* Replace output trans. to match 6-8Ω voice coil.
	CONE DIA.	V. C. DIA.				
SP2	12"	1 1/4"				

DIAL LIGHTS

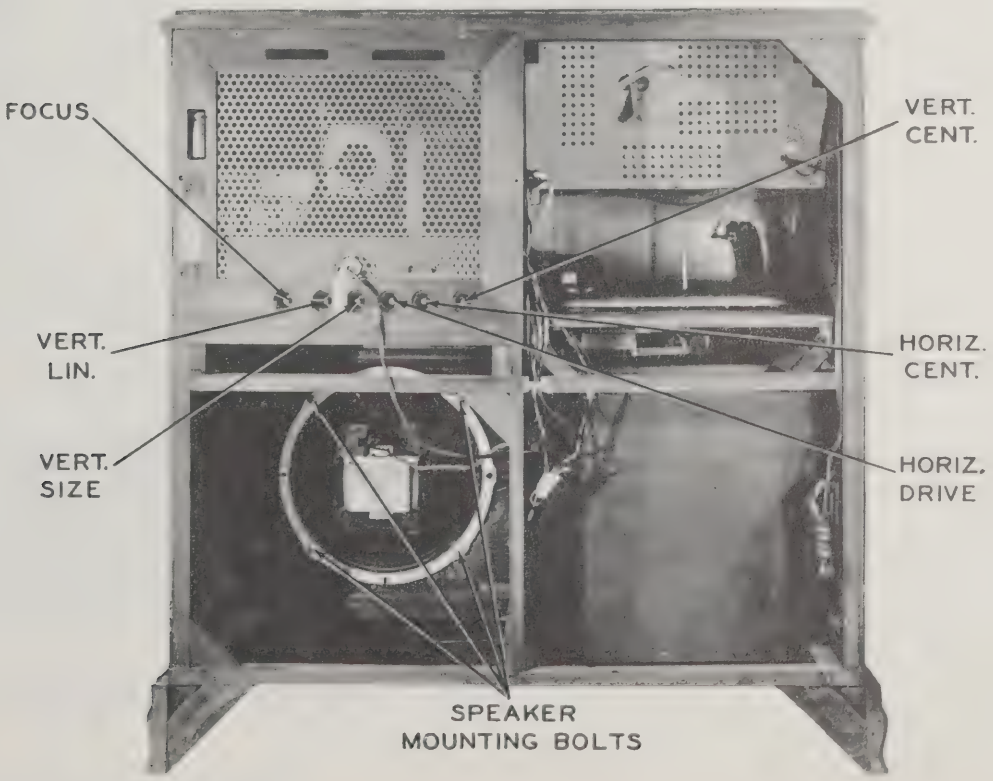
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					EMERSON PART No.		
M1	Bayonet	117V					117VAC Lamp

PHONO CARTRIDGE

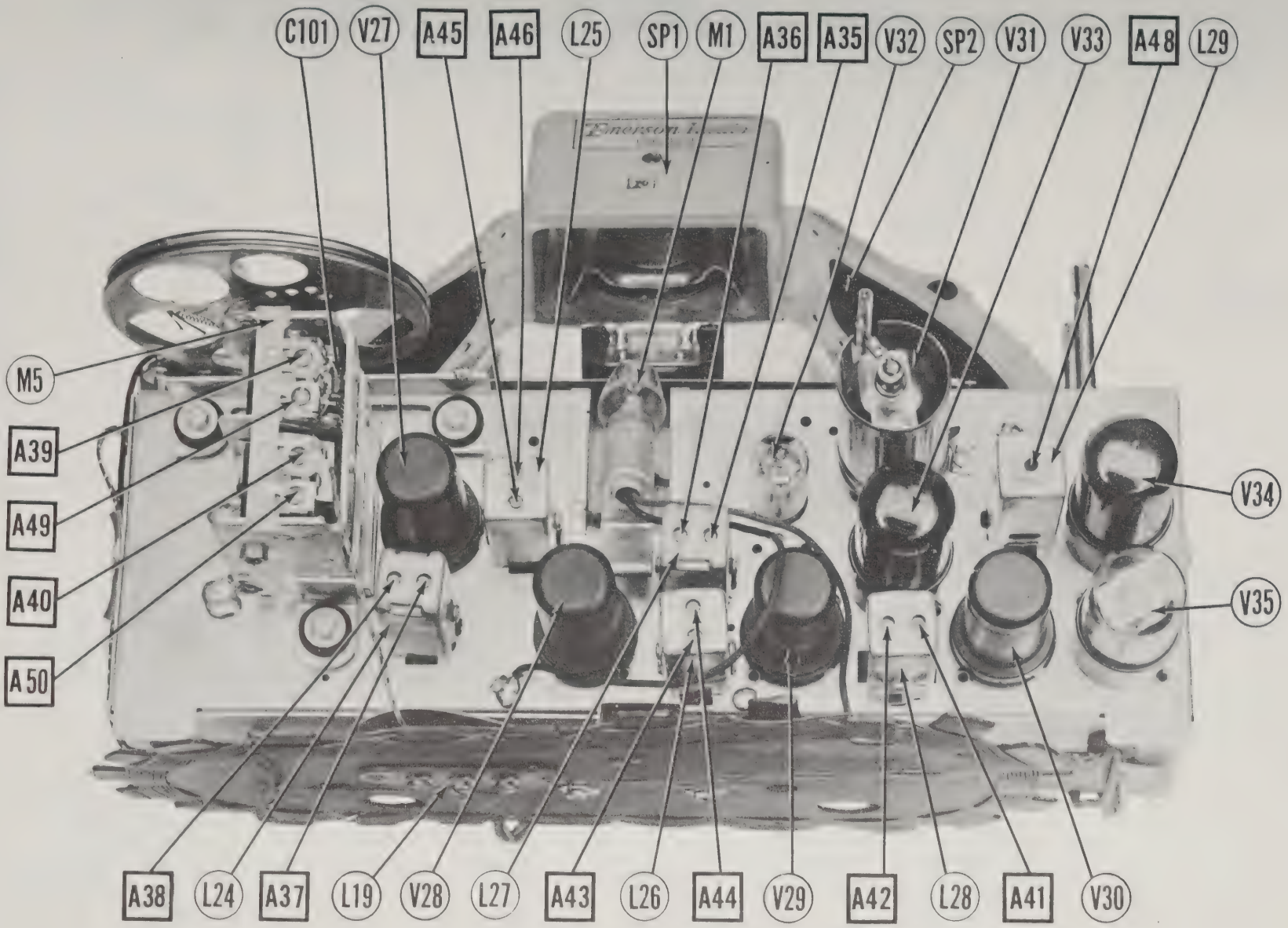
ITEM No.	REPLACEMENT DATA		REMARKS
	EMERSON PART No.	ASTATIC PART No.	
M2		L-70A	

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M3	Band Switch		
M4	Power Switch		TV-On-Off Switch
M5	Tuning Cap	900400	AM(31-530MMF, 25-200MMF)
M6	Ion Trap	708084	Permanent Magnet Type
M7	Television Tuner Assy		Complete RF Mixer and Osc. Assy.
M8	Socket and Cable	470232	Picture Tube
M9	Interlock Socket	470339	Includes Mounting Bracket.
M10	Interlock Plug	505007	
M11	Ballast Tube		
	Safety Glass	635010	
	Knob-Fine Tuning	450036	
	Knob-Selector (with hole)	450037	
	Knob-Dual-Large	450032	
	Knob-Dual-Small	450034	
	Tube Front Mask	410352	



CABINET-REAR VIEW



AM-FM CHASSIS-TOP VIEW

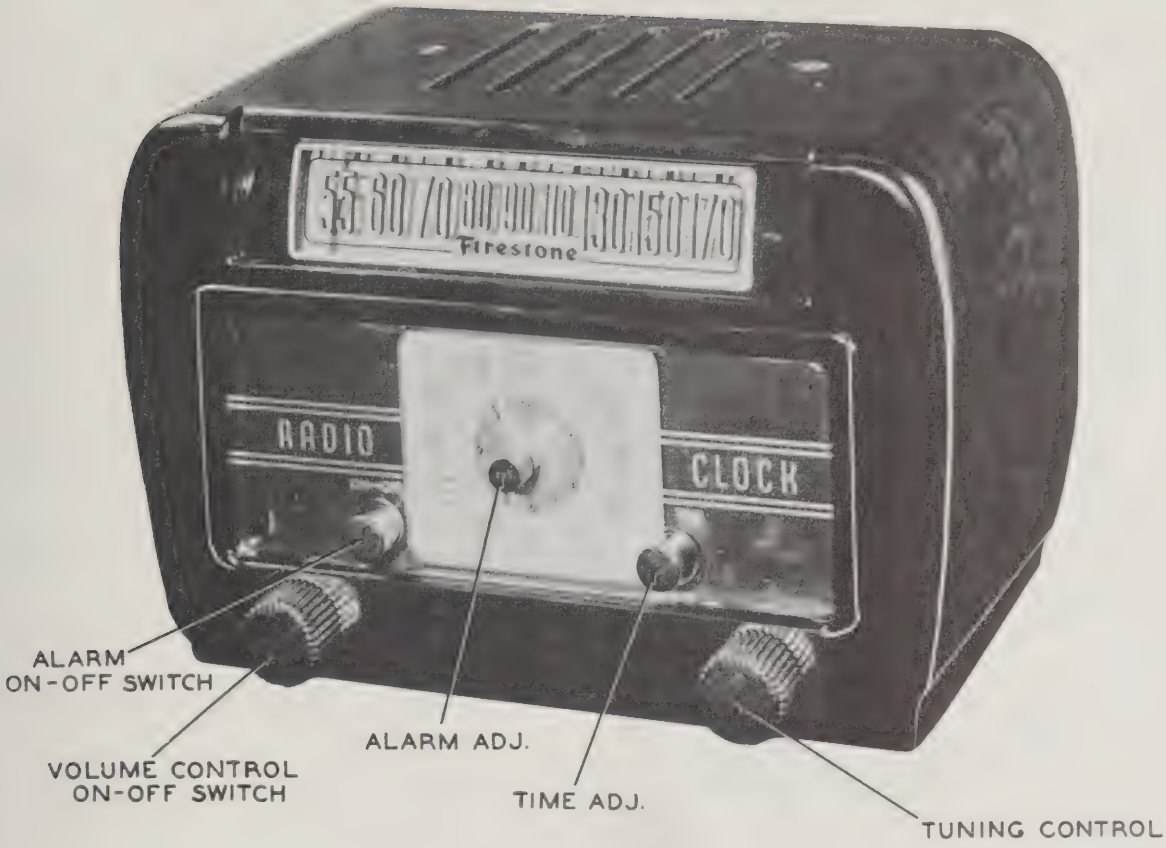
DISASSEMBLY INSTRUCTIONS

TV CHASSIS

1. Remove eight push-on type control knobs.
2. Remove six screws holding back cover. Remove cover.
3. Remove two phillips head screws holding antenna terminal strip. Remove terminal strip.
4. Remove audio plug from rear of FM-AM chassis.
5. Remove four 7/16" hex head machine bolts holding chassis. Remove chassis.

FM-AM CHASSIS

1. Remove four push-on type control knobs.
2. Remove four screws holding back and remove.
3. Disconnect TV power plug and phono motor plug. Remove phono pickup plug, TV audio plug from rear of chassis.
4. Remove speaker leads from speaker.
5. Remove four 11/32" hex nuts holding speaker. Remove speaker.
6. Remove four 5/16" hex head metal screws holding chassis. Remove chassis.



FIRESTONE
MODEL 4-A-69

FIRESTONE MODEL 4-A-69

TRADE NAME	Firestone, Model 4-A-69 (Code #155-8-85)
MANUFACTURER	The Firestone Tire & Rubber Co., Akron, Ohio
TYPE SET	AC Operated Superheterodyne Receiver with Loop Antenna and Electric Clock.
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amp., 12AT6 Det.-AVC-AF, 50B5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC
TUNING RANGE—BROADCAST	535-1700KC RATING .26 Amp. @ 117 volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Use isolation transformer if available. If not connect a .1 MFD. cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1 MFD	High side to rear stator of tuning Cap. Low side to B-.	455KC	Tuning Cap. fully open.	Across Voice Coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD. to reduce hum modulation.
2	Direct	High side to Ext. Ant. lead. Low side to B-.	1700KC	"	"	A5	Adjust for maximum output.
3	"	"	1500KC	Tune for max. signal.	"	A6	" " " "

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-8 SET #61 FOLDER 8

PARTS LIST AND DESCRIPTIONS

FIRESTONE MODEL 4-A-69

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: FIRESTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	Det.-AVC-AF. Amp.	12AT6	12AT6	7BT	
V4	Power Output	50B5	50B5	7BZ	
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	150	2033-2	PRSA150/30-30	EZ3315		DSB-2X30-150	TA-330	Filter
C1B	30	150							"
C2	.05	600	2000-25	P688-05	GT6S5		ST-6-05	72P1	Line Isolation
C3	.02	400	2000-2	P488-02	GT4S2		ST-4-02	TM-12	Tuning Cap. Isolation
C4	.05	400	2000-4	P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C5	.05	400	2000-4	"	"		"	"	RF Bypass
C6	220		2012-1	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode Filter
C7	.005	600	2000-5	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C8	220		2012-1	1468-0002	5W5T2	GP2K-250	MO.5-32	1FM-32	AF Plate Bypass
C9	.01	400	2000-1	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C10	.02	400	2000-2	P488-02	GT4S2		ST-4-02	TM-12	Output Plate Bypass
C11	.05	400	2000-4	P488-05	GT4S5		ST-4-05	TM-15	Filament Bypass

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	3013-3	D13-133	AM-60-Z	Volume Control
B	Shaft		Not Req.	E #	KSS-3 #	Attach to R1A per instructions
C	Switch		" "	41	SW-A	" " " " "

Use original pulley on shaft.

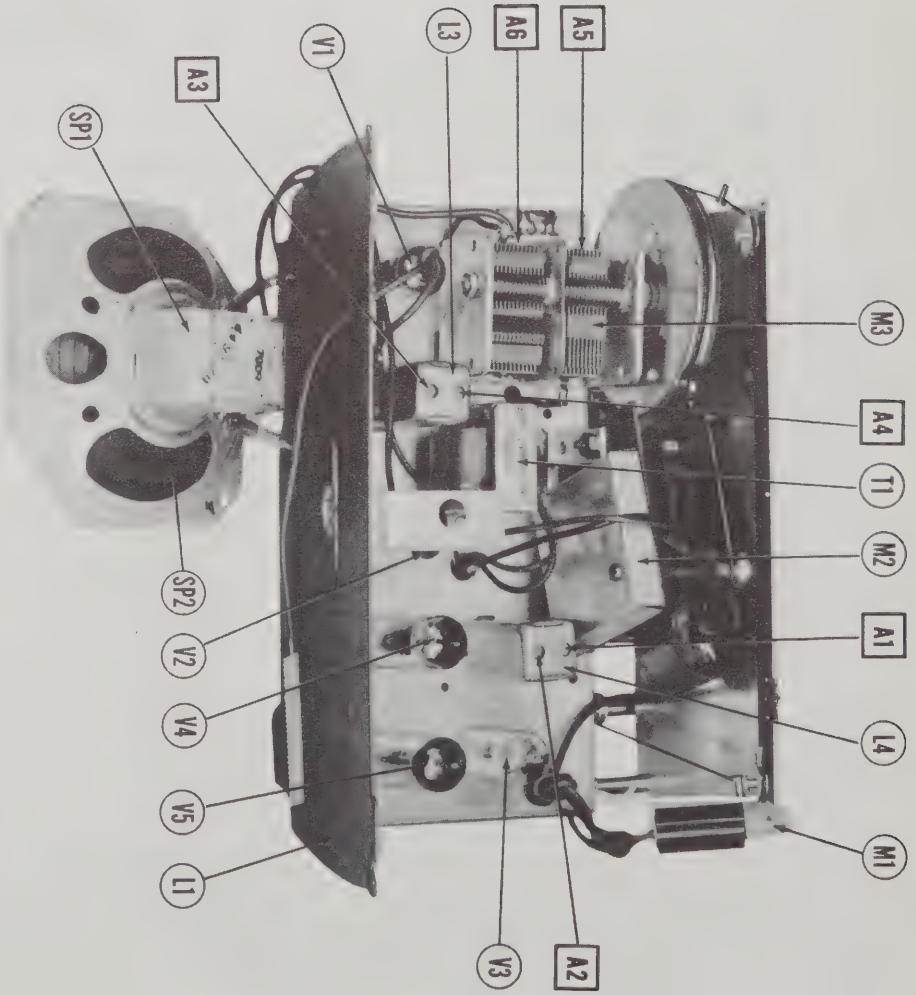
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: FIRESTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	3003-16	BTS-22K	Red-Red-Or. Osc. Grid
3	2.2 Meg.	½	3003-14	BTS-2.2 Meg.	Red-Red-Grn. AVC.Network
4	470KΩ	½	3003-13	BTS-470K	Yl.-Vi.-Yl. Line Isolation
5	4.7 Meg.	½	3003-15	BTS-4.7 Meg.	Yl.-Vi.-Grn. AF Grid
6	470KΩ	½	3003-13	BTS-470K	Yl.-Vi.-Yl. AF Plate
7	470KΩ	½	3003-13	BTS-470K	Yl.-Vi.-Yl. Output Grid
8	150Ω	½	3003-11	BW-½-150	BR.-Grn.-Br. Output Cathode
9	2700Ω	2	3004-3	BT-2-2700	Red-Vi.-Red Filter
10	18Ω	½	3003-12		Br.-Gray-Blk. Rectifier Ballast.
11	150	½	3003-11	BW-½-150	Br.-Grn.-Br. IF Cathode

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: FIRESTONE PART No.	STANCOR PART No.	THORDAR'N PART No.	MERIT PART No.	INSTALLATION NOTES
T1	2300Ω	3.1Ω	167Ω	.54Ω	1048	A-3330*	RO-2*	A-2928*	* Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: FIRESTONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V.C. IMP.		ST-113		
SP1	PM	3.1Ω	7009	Mod.P4-X	4A07	
	Cone Dia.	V.C. Dia.				
SP2	3 7/8"	9/16"				

R F COILS

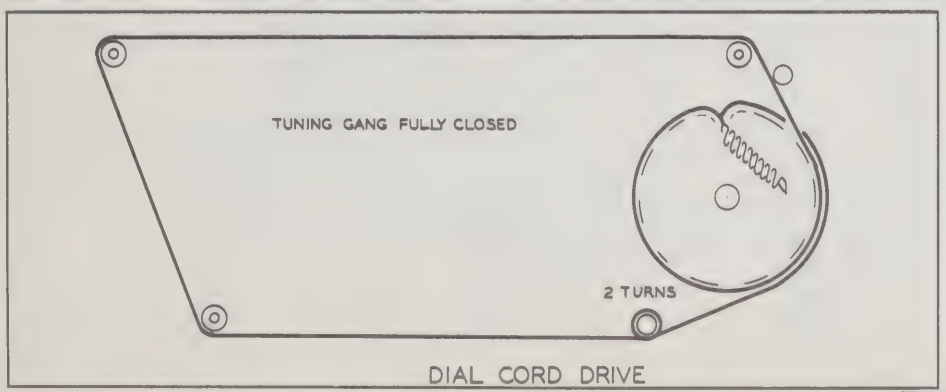
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: FIRESTONE PART No.	REPLACEMENT DATA: MEISSNER PART No.
L1	Loop Ant.	2Ω		1073	
L2	Osc. Coil	6.5Ω		1049	
L3	Input IF	12Ω	12Ω	1046-3	16-6678
L4	Output IF	16Ω	22Ω	1046-4	16-6678

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: FIRESTONE PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.15A	Brown			Type #47

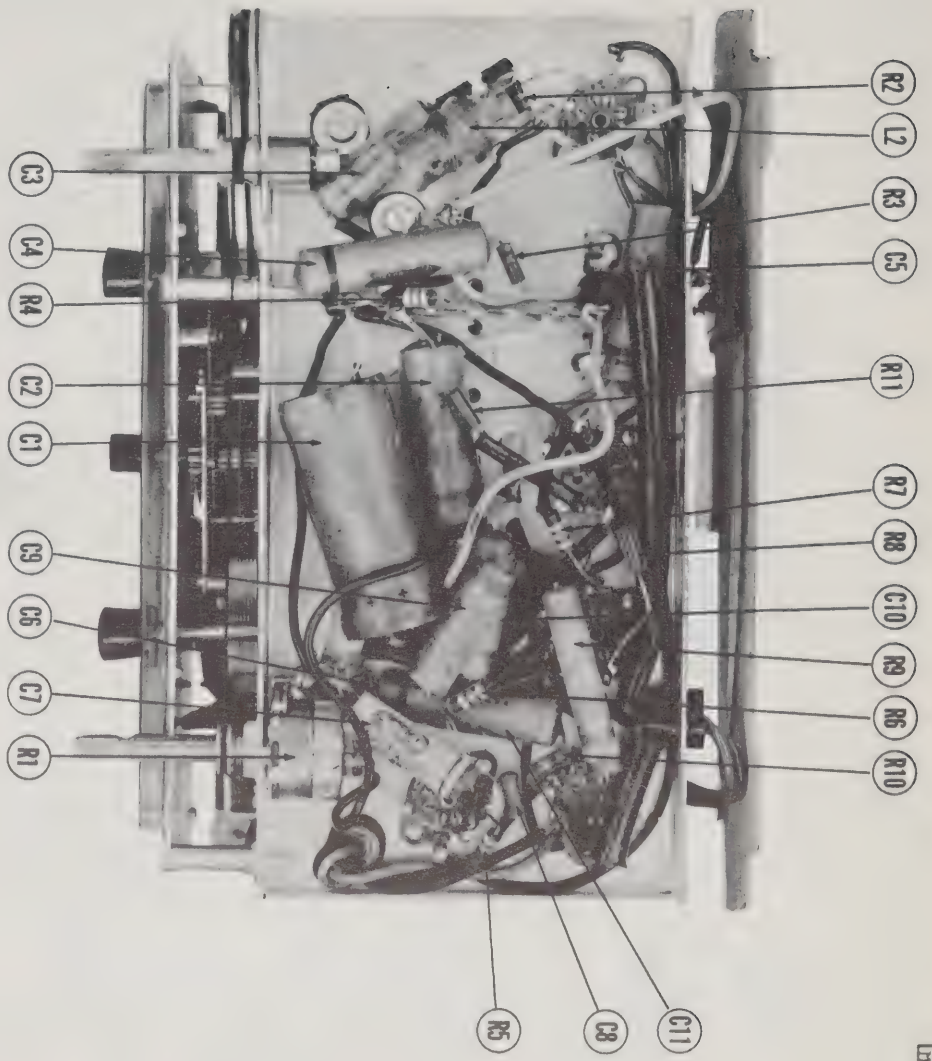
MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M2	Switch		Timer
M3	2 Gang Var. Cap.	2003C	(20-448MMF, 25-192MMF)
	Dial Scale	6016	Glass
	Dial Pointer	9113	
	Cabinet	4077A	
	Knob	4080-3	
	Knob	4066-2	Clock

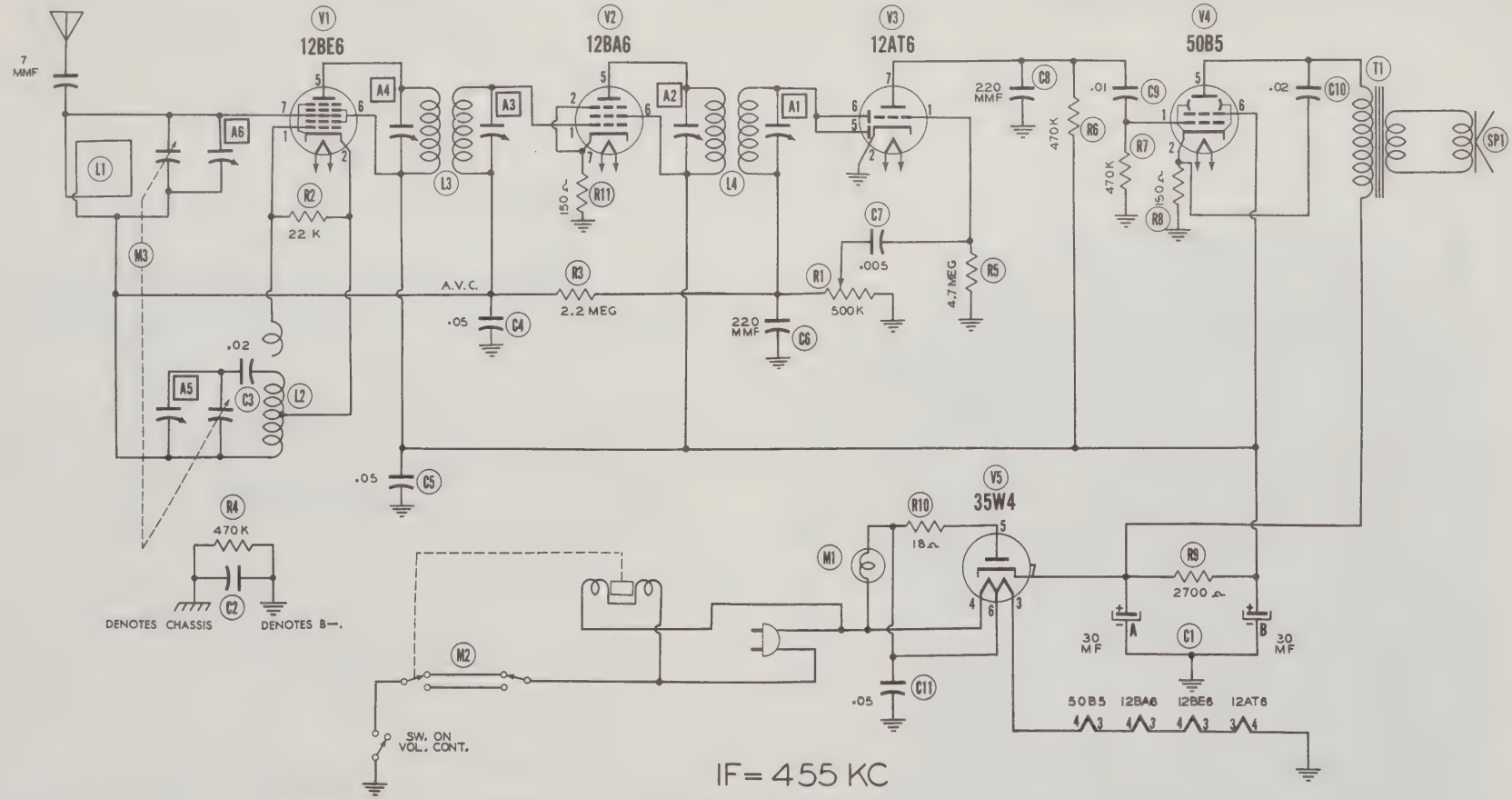


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



FIRESTONE MODEL 4-A-69



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	§-6.8VDC	0V	13VAC	25VAC	75VDC	75VDC	-1.5 VDC
V 2	12BA6	-.2VDC	0V	25VAC	38VAC	75VDC	75VDC	1VDC
V 3	12AT6	-.5VDC	0V	13VAC	0V	-.6VDC	-.6VDC	36VDC
V 4	50B5	.5VDC	5VDC	38VAC	87VAC	117VDC	75VDC	.5VDC
V 5	35W4	0V	0V	87VAC	117VAC	112VAC	115VAC	122VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BE6	22KΩ	.5Ω	13Ω	25Ω	*2700Ω	*2700Ω	2.5 Meg.
V 2	12BA6	2.5 Meg.	0Ω	25Ω	36Ω	*2700Ω	*2700Ω	150Ω
V 3	12AT6	4.7 Meg.	0Ω	13Ω	0Ω	400KΩ	400KΩ	*470KΩ
V 4	50B5	470KΩ	150Ω	36Ω	76Ω	*165Ω	*2700Ω	470KΩ
V 5	35W4	Inf.	Inf.	76Ω	100Ω	110Ω	95Ω	60KΩ

* Measured from pin 7 of V5.

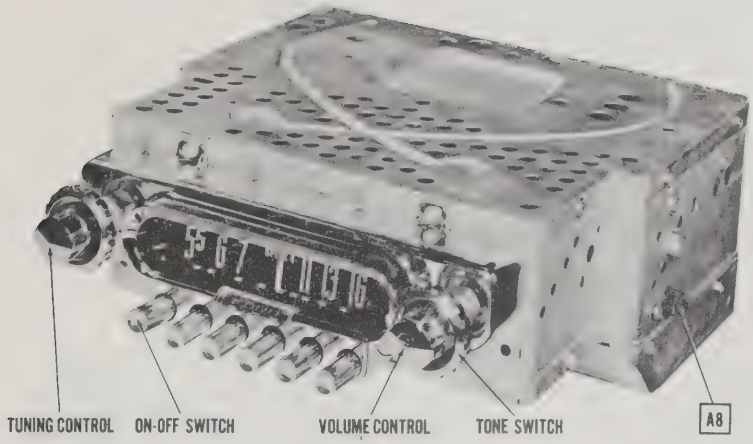
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

499-8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



FORD MODEL 8MF980

TRADE NAME	Ford, Model 8MF980 (8A-18805B)
SUPPLIER	Ford Motor Car Co., Detroit, Michigan
TYPE SET	Battery Operated Custom-Built Automotive Superheterodyne Receiver
TUBES (EIGHT)	Types 6BA6 RF Amp., 6SA7GT Converter, 6BA6 IF Amp., 6SR7GT DET-AVC-AF, 6SN7GT Phase Inverter, (2) 6V6GT Power Output, 6X5GT Rectifier.
POWER SUPPLY	6 Volt Storage Battery — RATING 6.9 Amp., @ 6 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The dummy antenna used consists of a 27MMF capacitor in series with the high side of the signal generator and shunted by (on receiver side) a 23MMF capacitor, which connects to the antenna connector.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

After alignment has been completed, check the high frequency range of the tuning control. If the range is more or less than 1605KC, bend the lug stop near the volume control to limit the frequency coverate to 1605KC.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 8 (Grid) 6SA7GT (V2). Low side to chassis.	265KC	Tuning cap fully open.	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. Repeat this operation to assure accurate alignment.
2.	Dummy	See Pre-alignment	535KC	535KC	"	A5	Adjust for maximum output.
3.	Dummy	" " "	1300KC	1300KC	"	A6, A7 A8	Adjust for maximum output. Correct calibration by adjusting tuning eccentric screw at fulcrum of dial pointer.

RF ALIGNMENT PROCEDURE AFTER CORE OR COIL REPLACEMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	Dummy	See Pre-alignment	1675KC	1600KC	Across voice coil	A5	Screw slugs A10, A11, A12, A13 completely out of their respective coils. Adjust A5 for maximum output.
2.	Dummy	" " "	"	"	"	A6, A7 A8	Adjust for maximum output.
3.	Dummy	" " "	1300KC	1300KC	"	A10, A11, A12, A13	Return the position of the cores to approximately 11/16" from the coil form ends and adjust for maximum output.
4.	Dummy	" " "	600KC	Tune for maximum output.	"	A9	Rock tuning control and adjust A9 for maximum output. Check calibration at 1300KC. If weak or off scale, repeat steps 3 and 4.

After installing receiver in car, extend antenna to maximum, and tune in weak station near 1300KC. Adjust A8 for maximum volume.

FORD MODEL
8MF980 (8A-18805B)

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6SA7GT	6SA7GT	8AD	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET-AVC-AF Amp.	6SR7GT	6SR7GT	8Q	
V5	Phase Inverter	6SN7GT	6SN7GT	8BD	
V6	Power Output	6V6GT	6V6GT	7AC	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

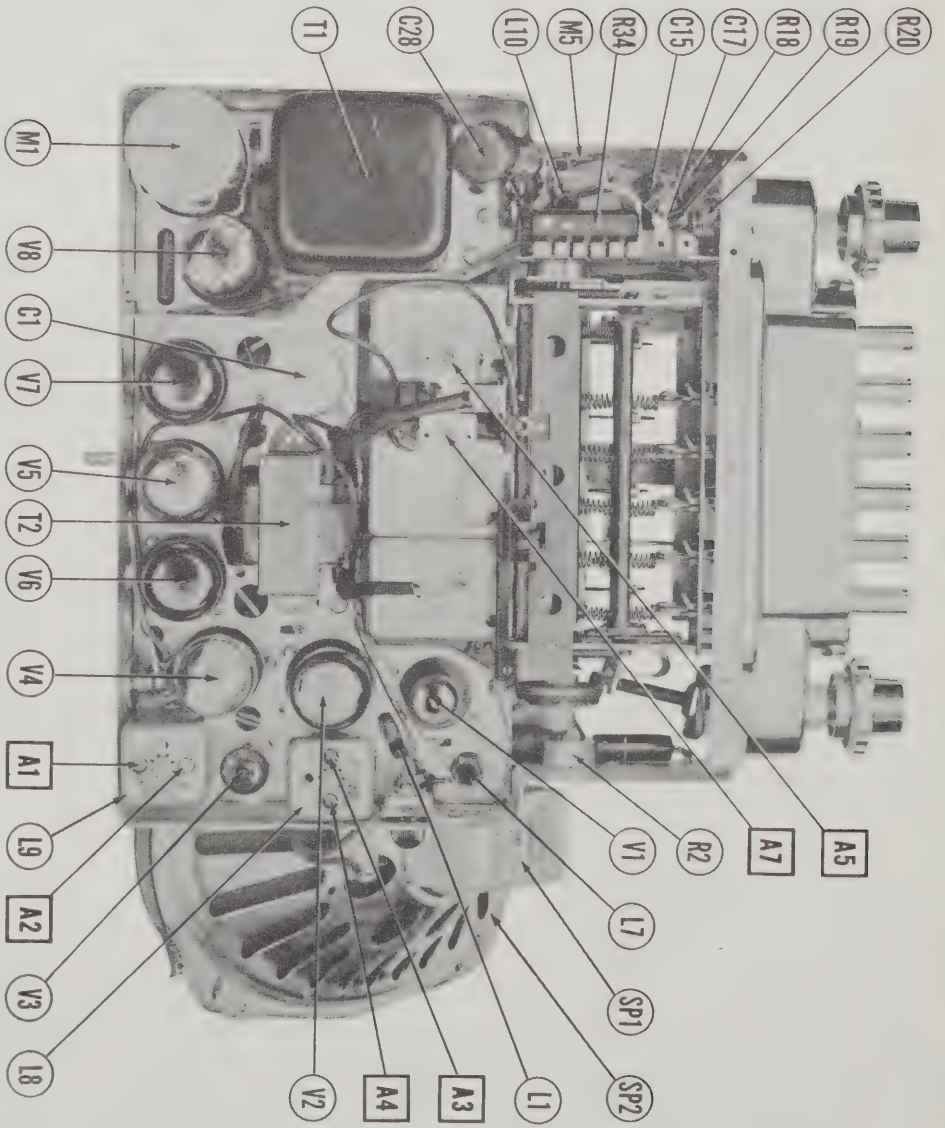
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	20	400	22-1484	AF44J4A	UP2245C		DY-312	EL-322	■ Filter
B	20	400							▲ "
C	20	25							Output Cath. Bypass
C2	20	25	22-1553	PRS50/25	BR202A		M-25-25	TA-25	AF Cath. Bypass
C3	.1	200	22-190	P288-1	GT2P1		ST-2-1	TM-1	Cath. Bypass
C4	100	500	22-1730	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C5	250	500	22-1136	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Fixed Trimmer
C6	260		22-1712	1469-00025	5R5T25		MOS.5-325	MS-325	" "
C7	100	500	22-1730	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Grid Cap.
C8	.022	400	22-1751	P488-022	GT4S25		ST-4-02	TM-12	Conv. Cath. Bypass
C9	5000	500	22-1752	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C10	.1	400	22-170	P488-1	GT4P1		ST-4-1	TM-1	RF Bypass
C11	.022	400	22-1751	P488-022	GT4S25		ST-4-02	TM-12	AVC Filter
C12	100		22-1730	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	IF Coupling
C13	.005	200	22-906	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C14	150	500	22-1137	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Tone Comp.
C15	500	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	" "
C16	.005	200	22-906	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" "
C17	.01	200	22-1466	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11	" "
C18	.0015	400	22-1743	P688-0015	GT6D1	GP2L-0015	ST-6-001	TM-21	" "
C19	250	500	22-182	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass
C20	.05	600	22-1749	P688-05	GT6S5		ST-6-05	TM-15	Audio Coupling
C21	.1	400	22-1748	P488-1	GT4P1		ST-4-1	TM-1	AF Plate Decoup.
C22	.022	600	22-1750	P688-022	GT6S25		ST-6-02	TM-12	Audio Coupling
C23	.022	600	22-1750	P688-022	GT6S25		ST-6-02	TM-12	" "
C24	.0033	600	22-1747	P688-0033	GT6D3		ST-6-003	TM-23	Output Plate Bypass
C25	.0033	600	22-1747	P688-0033	GT6D3		ST-6-003	TM-23	" " "
C26	.008	1600	22-1448	1689-008	GT16D8		STM-16-008	MB-28	Buffer
C27	.5	100	22-1728				SHH-1	68P20	Hash Filter
C28	.5	120	22-1238				SHH-1	68P25	" "

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	1 Meg.	½	63-1590			Volume control tapped @ 200K and 400KΩ
B	Switch					Tone SW. (concentric dual)
R2	150 to 800Ω		63-1662			Sensitivity control

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES
R3	330K	½	63-1891	BTS-330K	Or.-Or.-Yl. AVC Network
R4	10KΩ	½	63-1827	BTS-10K	Br.-Blk.-Or. RF Plate
R5	330KΩ	½	63-1891	BTS-330K	Or.-Or.-Yl. AVC Network
R6	22KΩ	½	63-1841	BTS-22K	Red-Red-Or. Osc. Grid
R7	33Ω	2	63-1764	BTA-330	Or.-Or.-Br. Converter Cathode
R8	820Ω	½		BTS-820	Gray-Red-Br. " "
R9	1 Meg.	½	63-1912	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
R10	12KΩ	2	63-1823	BT-2-12K	Br.-Red-Or. Screen Dropping
R11	150Ω	½	63-1750	BW-½-150	Br.-Grn.-Br. IF Cathode
R12	1 Meg.	½	63-1912	BTS-1 Meg.	Br.-Blk.-Grn. AVC Network
R13	220KΩ	½	63-1884	BTS-220K	Red-Red-Yl. Diode Load
R14	150Ω	½	63-1792	BTS-1500	Br.-Grn.-Red AF Cathode
R15	56KΩ	½	63-1859	BTS-56K	Grn.-Blue-Or. AF Plate
R16	27KΩ	½	63-1845	BTS-27K	Red-Yl.-Or. AF Plate Decoupling
R17	220KΩ	½	63-1884	BTS-220K	Red-Red-Yl. Tone Compensation
R18	120KΩ	½	63-1873	BTS-120K	Br.-Red-Yl. Tone Compensation
R19	68KΩ	½	63-1862	BTS-68K	Blue-Gray-Or. " "
R20	100KΩ	½	63-1869	BTS-100K	Br.-Blk.-Yl. " "
R21	56KΩ	½	63-1859	BTS-56K	Grn.-Blue-Or. " "
R22	1000Ω	½	63-1785	BTS-1000	Br.-Blk.-Red Phase Inv. Cathode
R23	56KΩ	½	63-1859	BTS-56K	Grn.-Blue-Or. AF Plate
R24	330KΩ	½	62-1890	BTS-330K	Or.-Or.-Yl. AF Grid
R25	56KΩ	½	63-1859	BTS-56K	Grn.-Blue-Or. Phase Inv. Plate
R26	24KΩ	½	63-1843	BTS-22K	Red-Yl.-Or. Phase Inv. Grid
R27	470KΩ	½	63-1897	BTS-470K	Yl.-Vl.-Yl. Feedback
R28	330KΩ	½	63-1891	BTS-330K	Or.-Or.-Yl. Output Grid
R29	330KΩ	½	63-1891	BTS-330K	Or.-Or.-Yl. " "
R30	330Ω	2	63-1622	BW-2-330	Or.-Or.-Br. Output Cathode
R31	1800Ω	2	63-1620	BW-2-1800	Br.-Gray-Red Filter
R32	82Ω	½	63-1740	BW-½-82	Gray-Red-Blk. Hash Suppression
R33	82Ω	½	63-1740	BW-½-82	Gray-Red-Blk. " "
R34	5.1Ω	1	63-1375	BW-1-5.6	Grn.-Br.-Gold Series Pilot Light

TRANSFORMER (VIBRATOR)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 3.2A	490VCT @ .053A			95-1073	P-4060 *	VT-1A	P-4071 *

* Drill new mounting holes.

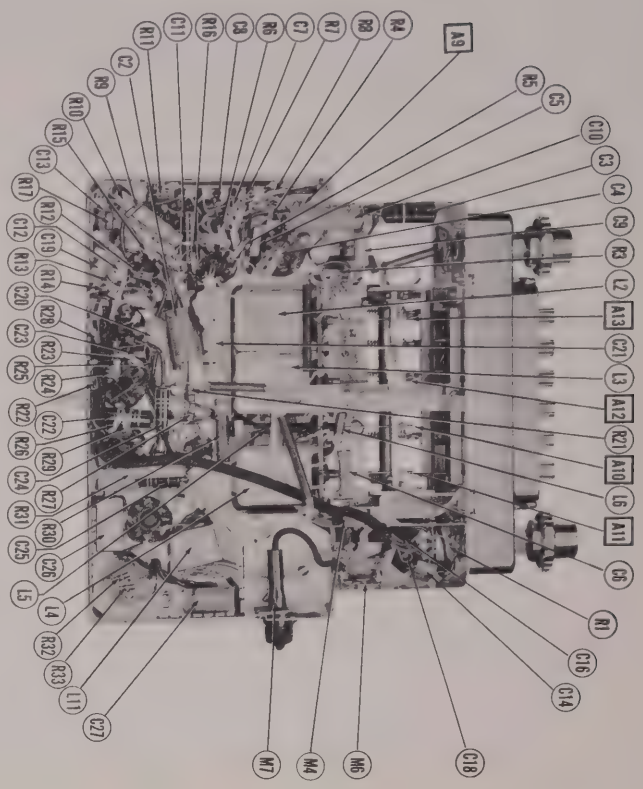
TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T2	8.6KΩ CT	3.3Ω	430Ω CT	.2Ω	95-1079	A-3823	RO-307*	A-2936	* Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ZENITH PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD IMP. 3.3Ω	V. C. IMP.	49-627	ST-810 MOD. P69-V	6PA3	
SP2	CONE DIA. 6" X 9"	V. C. DIA. 3/4"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Ant. Noise Chk.	1Ω		S8819	
L2	Ant. Coil	13Ω		S-14227	
L3	RF Coil	13Ω		S-14227	
L4	Conv. Grid	13Ω		S-14227	
L5	Osc. Coil	3.6Ω		S-14228	
L6	Osc. Shunt	2Ω		S-14225	
L7	Osc. Series	1Ω		S-14226	
L8	Input IF	40Ω	40Ω	95-1077	
L9	Output IF	60Ω		95-1078	
L10	Noise Chk.	0Ω		S-11232	
L11	Hash Chk.	0Ω		20-2/3	

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	REPLACEMENT DATA RADIART PART No.	INSTALLATION NOTES
M1	Int.	6.0	115∿	190-22	C00	5300	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ZENITH PART No.	NOTES
M2	Bayonet	6-8V	0.25A	Blue		Type #44
M3	Bayonet	6-8V	0.25A	Blue		Type #44

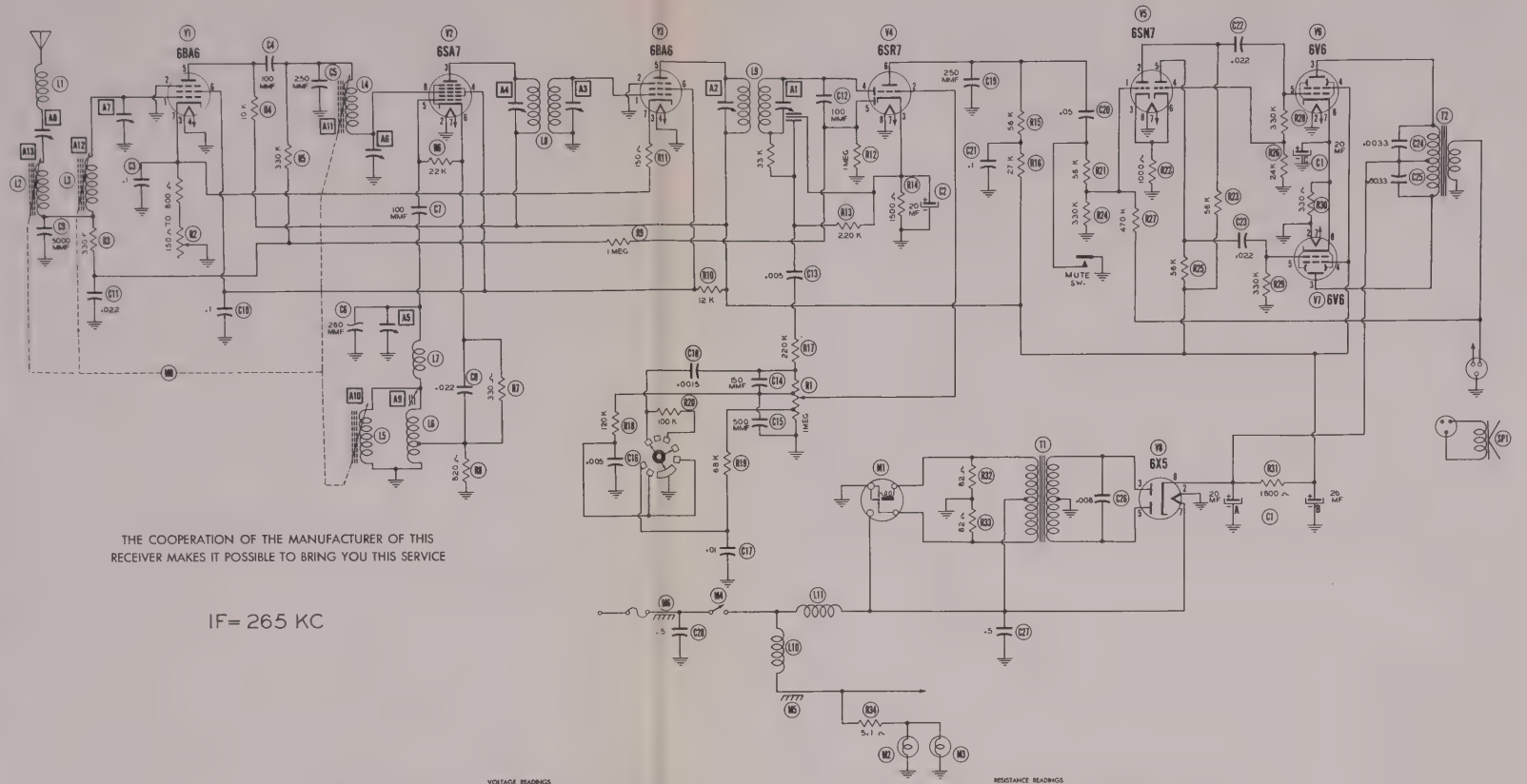
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M4	Switch	85-435	On-Off
M5	Spark Plate		
M6	Spark Plate		
M7	Fuse	136-11	14 Amp.
M8	Tuner Coil Assembly	8-14295	
A5, A7	Dual Trimmer	22-1722	Osc. Adj. / RF Adj.
A6	Trimmer	22-1715	RF Adj.
A8	Trimmer	22-1812	Ant. Adj.
	Dial Scale	26-409	
	Dial Pointer	59-210	

PUSHBUTTON ADJUSTMENT

1. Make up a list of five stations desired to be tuned by the pushbuttons.
2. Allow receiver to warm up for 15 minutes and tune in first station manually.
3. Loosen the #1 pushbutton by turning counter clockwise no more than 2 turns.
4. Hold manual at desired station and push # 1 button all the way in.
5. Release pushbutton and tighten by turning clockwise. (Finger pressure is sufficient.)
6. Repeat the procedure outlined above for the remaining pushbuttons.

DATE 5/49 699-9 SET #61 FOLDER 9



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

IF= 265 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	0V	0V	6VDC	0V	190VDC	95VDC	5.4VDC	
V 2	6SA7	0V	0V	210VDC	95VDC	5-4.6VDC	3.2VDC	6VDC	0V
V 3	6BA6	0V	0V	0V	6VDC	210VDC	95VDC	6VDC	
V 4	6SR7GT	0V	0V	2.9VDC	1.2VDC	0V	75VDC	6V3C	0V
V 5	6SN7GT	0V	115VDC	3.8VDC	0V	102VDC	3.8VDC	0VDC	0V
V 6	6V6GT	0V	6VDC	245VDC	215VDC	0V	0V	0V	14VDC
V 7	6V6GT	0V	6VDC	245VDC	215VDC	0V	0V	0V	14VDC
V 8	6X5GT	0V	6VDC	270VAC	0V	270VAC	0V	0V	250VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

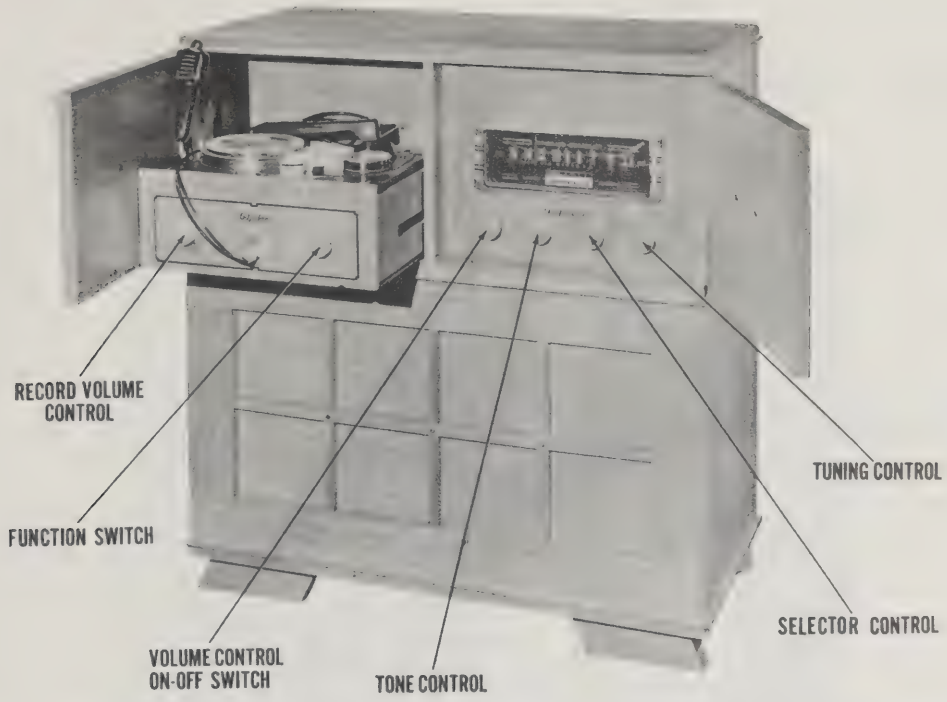
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	8.2 Meg.	0Ω	.5%	0Ω	*12KΩ	*15KΩ	800Ω	
V 2	6SA7	0Ω	0Ω	*1800Ω	*13KΩ	23KΩ	340Ω	.2Ω	8.2 Meg.
V 3	6BA6	40Ω	0Ω	0Ω	.2Ω	*1800Ω	*13KΩ	1000Ω	
V 4	6SR7GT	0Ω	550KΩ	1500Ω	270KΩ	1 Meg.	*801Ω	.2Ω	0Ω
V 5	6SN7GT	200KΩ	*56KΩ	10.5K	24KΩ	*56KΩ	1000Ω	.2Ω	0Ω
V 6	6V6GT	0Ω	.5Ω	*240Ω	*1800Ω	330KΩ	Inf.	0Ω	330Ω
V 7	6V6GT	0Ω	.5Ω	*170Ω	*1800Ω	350KΩ	Inf.	0Ω	330Ω
V 8	6X5GT	Inf.	.2Ω	210Ω	Inf.	195Ω	Inf.	0Ω	300KΩ

* Measured from pin 8 of V8

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949



GILFILLAN MODEL 68-48

TRADE NAME	Gilfillan, Model 68-48
MANUFACTURER	Gilfillan Bros. Inc., 1815 Venice Blvd., Los Angeles, California
TYPE SET	AC Operated Combination Phono-Wire Recorder-Radio, Superheterodyne Receiver with Loop Antenna.
TUBES(TEN)	Types 6SK7 RF Amp., 6SA7 Converter, 6SF7 IF DET-AVC, 6AU6 Mic. Amp., 6C4 Recorder Amp., 6AQ5 Erase-Record Osc., 6SC7 Playback Amp., 6SJ7 AF Amp., 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC
TUNING RANGE-BROADCAST	540-1630KC RATING .66 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

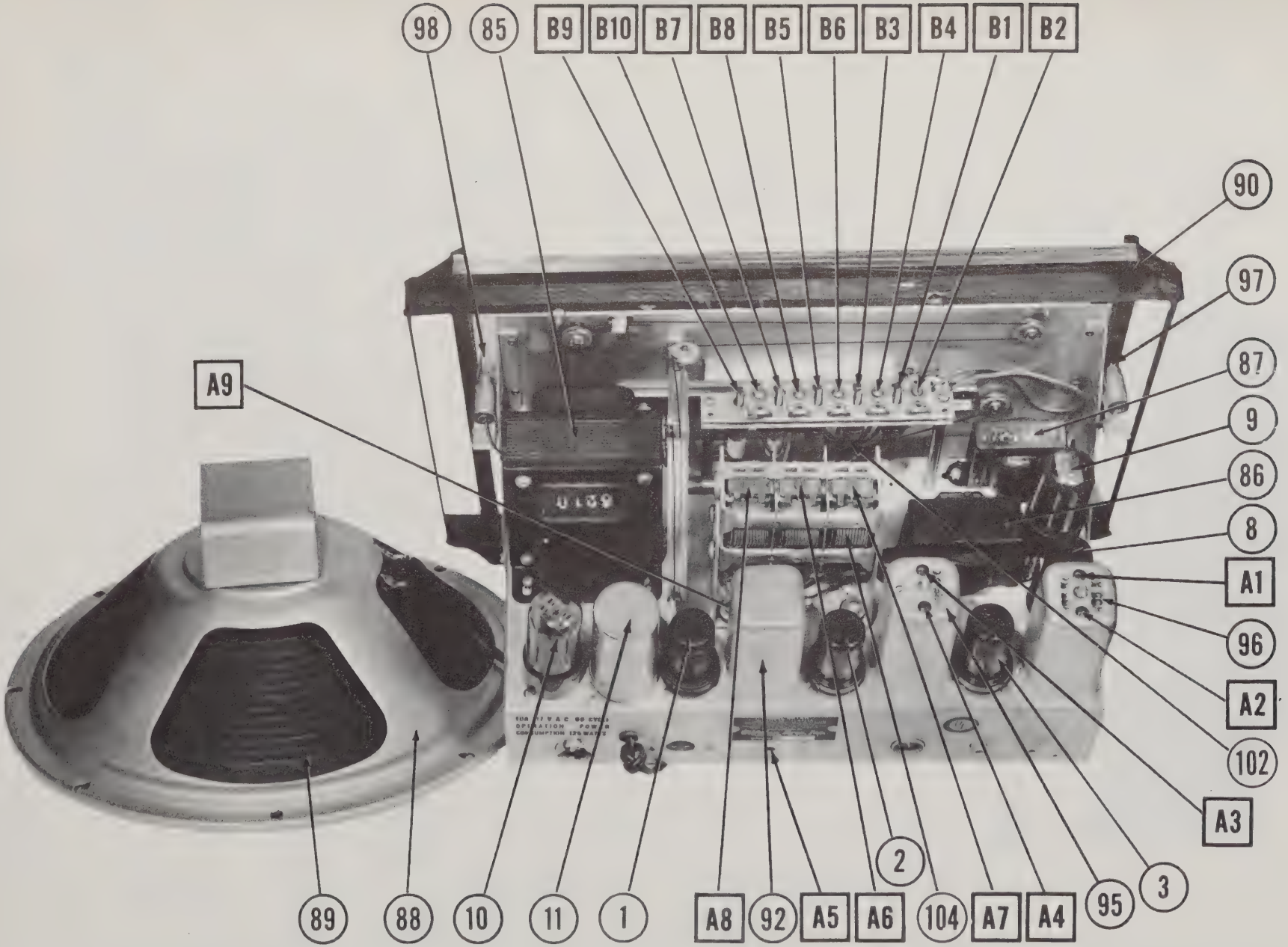
To set dial pointer, turn tuning capacitor fully open and set pointer at the triangle on the left hand end of dial scale.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to Pin 8 (Grid) 6SA7 (V2). Low side to chassis.	455KC	Tuning cap fully open	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output.
2.	Direct	Across Loop Input Terminals.	"	"	"	A5	Adjust for minimum output.
3.		Loop	1500KC	1500KC	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		Loop	1500KC	Tune for max. output.	"	A7, A8	Adjust for maximum output.
5.		Loop	600KC	600KC	"	A9	Adjust for maximum output. Recheck A6 at 1500KC.

GILFILLAN
MODEL 68-48

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


98
85
B9
B10
B7
B8
B5
B6
B3
B4
B1
B2
90
97
87
9
86
8
A1
96
A2
102
A3
A9
89
88
10
11
1
A8
92
A5
A6
104
A7
A4
95
3
2

53
58
54
32
16
56
57
14
61
60
15
17
13
31
45
59
19
55
18
20
21
46
33
52
93
49
34
50
40
35
38
100
91
36
22
39
37
48
51

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	RF Amp.	6SK7	6SK7	8N	
2	Converter	6SA7	6SA7	8R	
3	IF Amp. DET-AVC	6SF7	6SF7	7AZ	
4	Mic. Amp.	6AU6	6AU6	7BK	
5	Recorder Amp.	6C4	6C4	6BG	
6	Erase-Record Osc.	6AQ5	6AQ5	7BZ	
7	Playback Amp.	6SC7	6SC7	8S	
8	AF Amp.	6SJ7	6SJ7	8N	
9	Power Output	6V6GT	6V6GT	7AC	
10	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GILFILLAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11A	40	450	D-14174-2-	AF444J *	UP4245		DY-315 †	EL-240	◓ Filter
B	20	450	303-107						▲ Filter
12A	20	450		AF88D4A	UP4431 5C		DY-305	EL-352	◓ Decoupling
B	40	150		PRS450/20	BR2045		M-20-450	UT-20	■ AF Plate Decoup.
C	40	150							▲ Cathode Bypass
D	20	25							" "
13	8	350		PRS350/8	BR835		M-8-450	UT-83	AF Decoupling
14	25	25	S03	PRS25/25	BR252A		M-25-25	TA-25	Cathode Bypass Note
15	.002	600		684-002	GT6D2		ST-6-002	TC-22	Output Plate Bypass
16	.05	600		684-05	GT6S5		ST-6-05	TC-15	Audio Coupling
17	.01	600		684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	" "
18	.25	200		484-25	GT2P25		ST-2-25	TC-2	AF Screen Bypass
19	.005	600		684-005	GT6D5	GP2M-005	ST-6-005	TC-25	Tone Compnesation
20	.05	400		484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
21	.1	600		684-1	GT6P1		ST-6-1	TC-1	IF Screen Bypass
22	.05	400		484-05	GT4S5		ST-4-05	TC-15	AVC Filter
23	.05	400		484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
24	.02	400		484-02	GT4S2		ST-4-02	TC-12	" "
25	.01	400		484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Tone Comp. Note
26	.01	400		484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	" "
27	.05	400		484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
28	.05	200		484-05	GT2S5		ST-4-05	TC-15	" "
29	.1	400		484-1	GT4P1		ST-4-1	TC-1	" "
30	.05	400		484-05	GT4S5		ST-4-05	TC-15	Indicator Coupling
31	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode RF Filter
32	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	" " "
33	50	500		1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap.
34	15	300						MS-415	Fixed Trimmer
35	100	300		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
36	70	500			5W5Q7		MS-47		Fixed Trimmer
37	400	500		1468-0004	5W5Q4		MO.5-34	1FM-34	" "
38	100	300		1468-0001	5W5Q1	GP1K-100	MO.5-31	1FM-31	RF Coupling
39	100	500		1468-0001	5W5Q1	GP1K-100	MO.5-31	1FM-31	RF Coupling
40	100	300		1468-0001	5W5Q1	GP1K-100	MO.5-31	1FM-31	Tone Compensation
41	250	300		1468-00025	5W5Q25	GP2K-250	MO.5-325	1FM-325	" "
42	1000	300		1468-001	1W5D1	GP2L-001	MO.3-21	1FM-21	" "
43	300	500							Indicator Bypass Note
44	250	500		1468-00025	5W5Q25	GP2K-250	MO.5-325	1FM-325	Indicator Bypass Note

* Parellel sections to obtain desired capacity.
† Omit bypass section
Note. Not used in all models.

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS: TOTAL DIRECT CURRENT	RATINGS: D. C. RESISTANCE	RATINGS: INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
86	.095A	250Ω	8.5HY	13 559	C-1709 ‡		C-2993 ‡	‡ Drill one new mounting hole.

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
87	4300Ω	3.6Ω	340Ω	.3Ω	1583	A-3849	RO-303	A-2902	

SPEAKER

ITEM No.	RATINGS: FIELD / PM	RATINGS: V. C. IMP.	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
88	PM	3.6Ω	2844	ST-102 ‡ MOD P12-S	12A6 ‡	‡ Replace output XFMR to match 6-8Ω voice coil.
89	CONE DIA. 11 1/2"	V. C. DIA. 1"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA: MEISSNER PART No.
90	Loop Ant.		2Ω	107/97-21	
91	IF Wave Trap		80Ω		
92	RF Coil	78Ω	4Ω	68-17	
93	Osc. Coil		7.5Ω	68-20	
94	Erase Osc.	0Ω	5.5Ω	XP-560	
95	Input IF	27Ω	27Ω	66AM/68-21	
96	Output IF	30Ω	28Ω	66AM/68-22	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: GILFILLAN PART No.	REPLACEMENT DATA	NOTES
97	Bayonet	6-8V	0.15A	Brown			Type #47
98	Bayonet	6-8V	0.15A	Brown			Type #47
99	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	GILFILLAN PART No.	NOTES
100	Switch		Tuning-PB-Phono
101	Switch	36400-H-4	Function
102	PB Coil Assby.	PB-5E-3A1.1	
103	Lamp		Neon NE-51
104	3 Gang Var. Cap.	CN-824177	(30-539MMF, 32-535MMF, 21-532MMF)
	Dial Scale	68-10	Glass
	Dial Pointer	107-8	

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	GILFILLAN PART No.	IRC PART No.	CLAROSTAT PART No.	
45A	2 Meg.	½	4621	D13-139	M-66-Z	Volume control
B	Shaft			A	Not Req.	Attach to 45A Per Instructions
C	Switch			41	SW-A	" " " " "
46A	500KΩ	½	4620	D13-133	M-60-Z	Tone control
B	Shaft			A	Not Req.	Attach to 46A Per Instructions
47A	1 Meg.	½		D11-137	M-61-Z	Record Vol. Mixer Control
B	Shaft			A	Not Req.	Attach to 47A Per Instructions,

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	GILFILLAN PART No.	IRC PART No.		
48	47K Ω	½		BTS-470K	Yl.-Vl.-Yl.	RF Grid
49	47[illegible]Ω	½		BTS-4700	Yl.-Vl.-Red	RF Plate Load
50	470KΩ	½		BTS-470K	Yl.-Vl.-Yl.	Conv. Grid
51	1KΩ	5		AB-10K		Screen Dropping
52	22KΩ	½		BTS-22K	Red-Red-Or.	Osc. Grid
53	47KΩ	½		BTS-47K	Yl.-Vl.-Or.	Diode Filter
54	22[illegible]Ω	½		BTS-220K	Red-Red-Yl.	Diode Load
55	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn.	AVC Net.
56	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn.	AF Grid
57	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn.	AF Screen
58	470K Ω	½		BTS-470K	Yl.-Vl.-Yl.	AF Plate Load
59	47KΩ	½		BTS-47K	Yl.-Vl.-Or.	AF Decoupling
60	470KΩ	½		BTS-470K	Yl.-Vl.-Yl.	Output Grid
61	3[illegible]Ω	1		5W-1-270	Red-Red-Br.	Output Cathode
62	1.2 Meg.	½		BTS-1.2 Meg.	Br.-Red-Grn.	Recording Amp. Grid
63	1[illegible]Ω	½		BTS-1800	Br.-Gray-Red	Recording Amp. Cathode
64	39KΩ	½		BTS-39K	Or.-White-Or.	Recording Amp. Plate Load
65	6[illegible]Ω	½		BTS-68K	Blue-Gray-Or.	Tone Comp.
66	22[illegible]Ω	½		BTS-220K	Red-Red-Yl	Neon Ind. Net.
67	22[illegible]Ω	½		BTS-220K	Red-Red-Yl.	" " "
68	8.2 Meg.	½		BTS-8.2 Meg.	Gray-Red-Grn.	" " "
69	82[illegible]Ω	½		BTS-820K	Gray-Red-Yl.	" " "
70	6[illegible]Ω	½		BTS-6800	Blue-Gray-Red	1st Playback Amp. Grid
71	22[illegible]Ω	½		BTS-220K	Red-Red-Yl.	1st Playback Amp. Plate Load
72	2.7 Meg.	½		BTS-2.7 Meg.	Red-Vl.-Grn.	2nd Playback Amp. Grid
73	12[illegible]Ω	½		BTS-120K	Br.-Red-Yl.	2nd Playback Amp. Plate Load
74	33[illegible]Ω	½		BTS-330K	Or.-Or.-Yl.	Tone Comp.
75	22[illegible]Ω	½		BTS-220K	Red-Red-Yl.	" "
76	27[illegible]Ω	½		BTS-270K	Red-Vl.-Yl.	" "
77	47KΩ	½		BTS-47K	Yl.-Vl.-Or.	" "
78	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vl.-Grn.	Mic. Amp. Grid
79	1800Ω	½		BTS-1800	Br.-Gray-Red	Mic. Amp. Cathode
80	22[illegible]Ω	½		BTS-220K	Red-Red-Yl.	Mic. Amp. Screen Dropping
81	27[illegible]Ω	½		BTS-27K	Red-Vl.-Or.	Mic. Amp. Screen Bleeder
82	47[illegible]Ω	½		BTS-470K	Yl.-Vl.-Yl.	Mic. Amp. Plate Load
83	8[illegible]Ω	1		BTA-820	Gray-Red-Br.	Decoupling
84	12[illegible]Ω	1		BTA-120K	Br.-Red-Yl.	"

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	GILFILLAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
85	117VAC @ .66A	650VCT @ .095 AMC	5.2VAC @ 2.0A	6.3VAC @ 3.1A	6210	P-8813* §	PV-90 † †	P-2952 *

†† Add series res. to reduce plate voltage.
* Mount vertical with universal mounting brackets.
§ Drill new mounting holes.

DISASSEMBLY INSTRUCTIONS

1. Remove tuner power plug, recorder power plug, recorder plug, phono pickup plug, loop antenna plug, and speaker plug from rear of chassis.
2. Remove four 5/16" hex nuts holding speaker. Remove speaker.
3. Remove four set screw type control knobs.
4. Remove three metal screws from underneath chassis. Remove chassis.

TO REMOVE RECORDER CHASSIS

1. Remove screw holding chain at rear of recorder.
2. Remove recorder motor plug.
3. Remove two recorder control knobs at coupling.
4. Remove chassis from drawer.

TELERADIO TUNER ADJUSTMENTS

Make up a list of station desired to be received by the automatic tuning system.

Make sure they fall within the ranges of the individual position which are as follows:

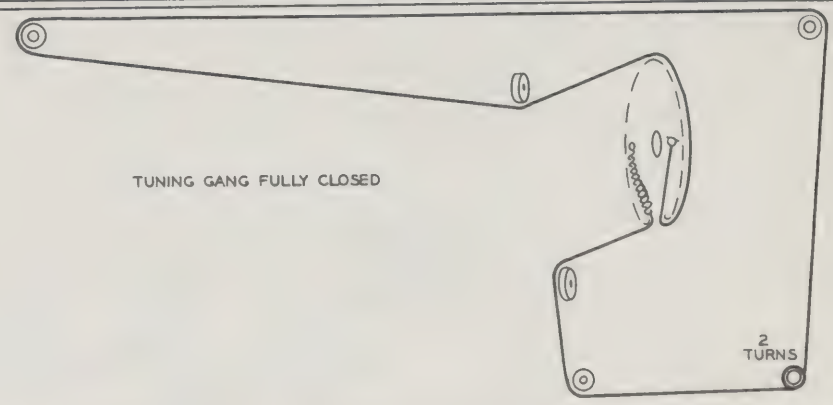
POSITION(LEFT TO RIGHT)	RANGES
1.	1100 to 1500KC
2	1100 to 1500KC
3	700 to 1250KC
4	550 to 900KC
5	550 to 900KC

Turn to position 1 and adjust B1 until desired station is tuned in. Adjust B2 for maximum volume.

Turn to position 2 and tune in station by adjust B3 and maximum volume by B4.

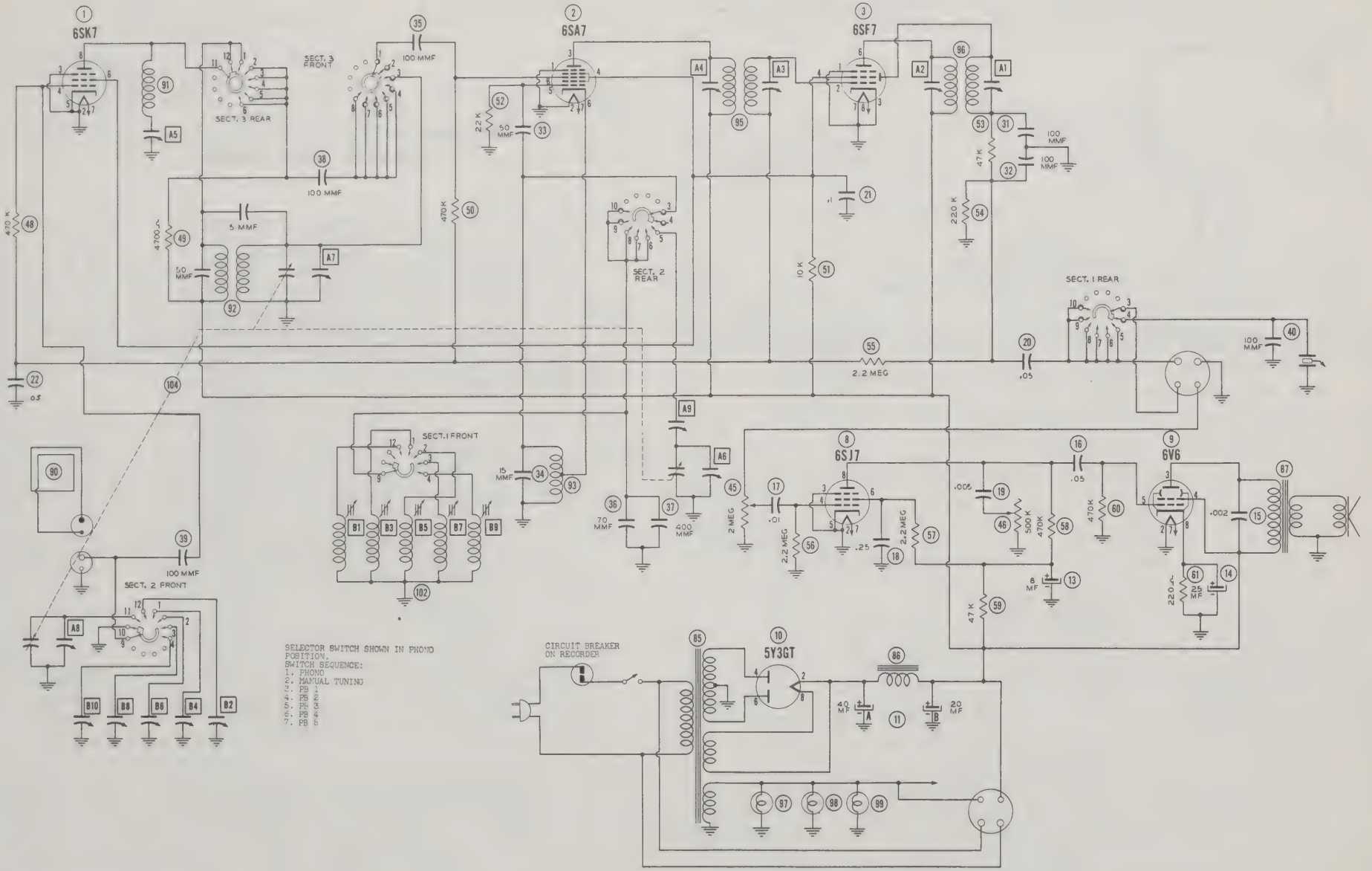
Repeat the procedure for the following positions.

After all station have been tuned in, it is recommended the entire procedure be repeated to insure accurate tuning of each position.



DIAL CORD DRIVE

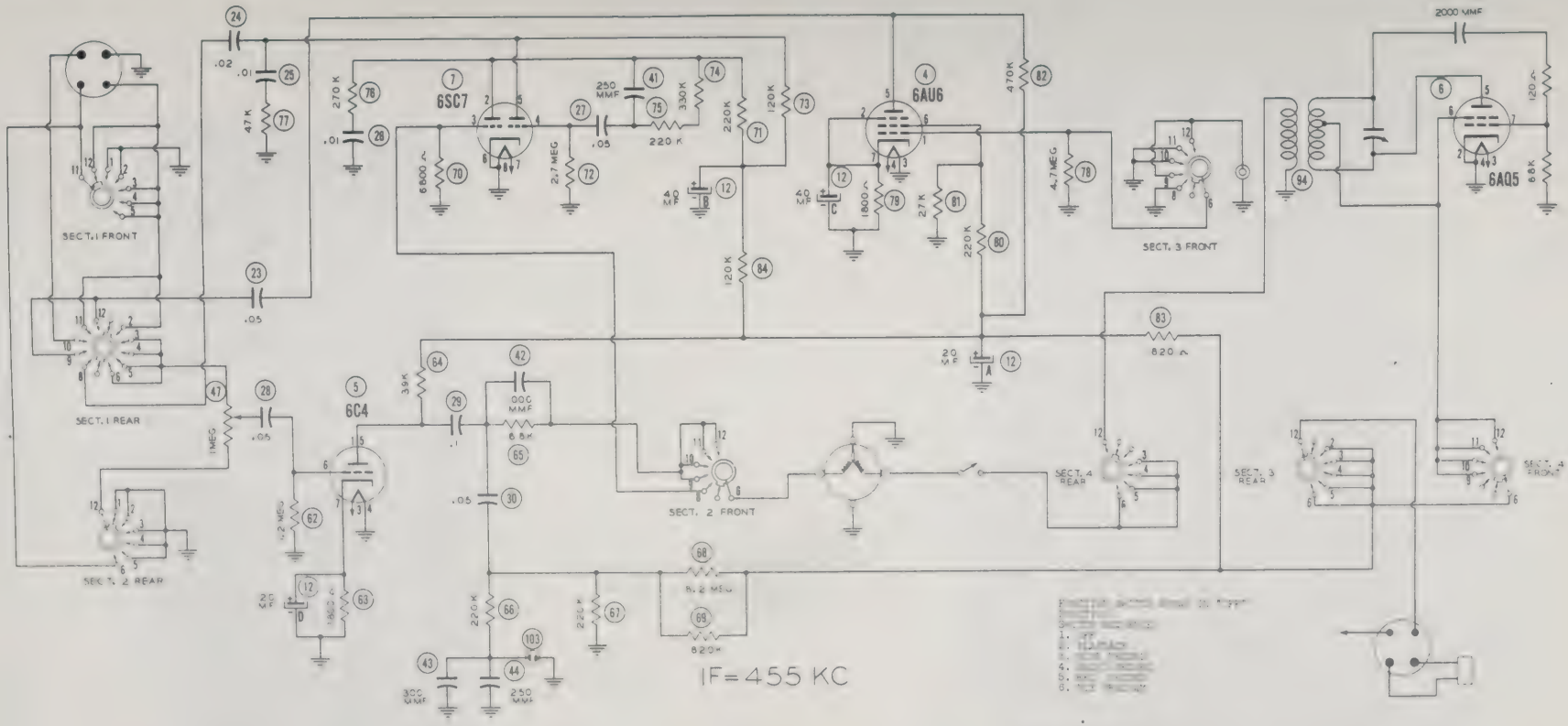
DATE 5/49 499-10 SET #61 FOLDER 10



A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

1. Voltmeter used for voltage readings measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



VOLTAGE READINGS

Item	Tube	Pin	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
2			6.8VAC	28VDC	100VAC	14-16VDC	0V	0V	-.1VDC
3									
4					6.8VAC	125VDC	14VDC	.5VDC	
5						140VDC	0V	5.8VDC	
8						-.3VDC	0V	15VDC	
9			0V		260VDC	282VDC	0V		
10	6Y3GT	0V		310VDC	0V	300VAC	0V	30	

TAKEN WITH VACUUM TUBE VOLTMETER.

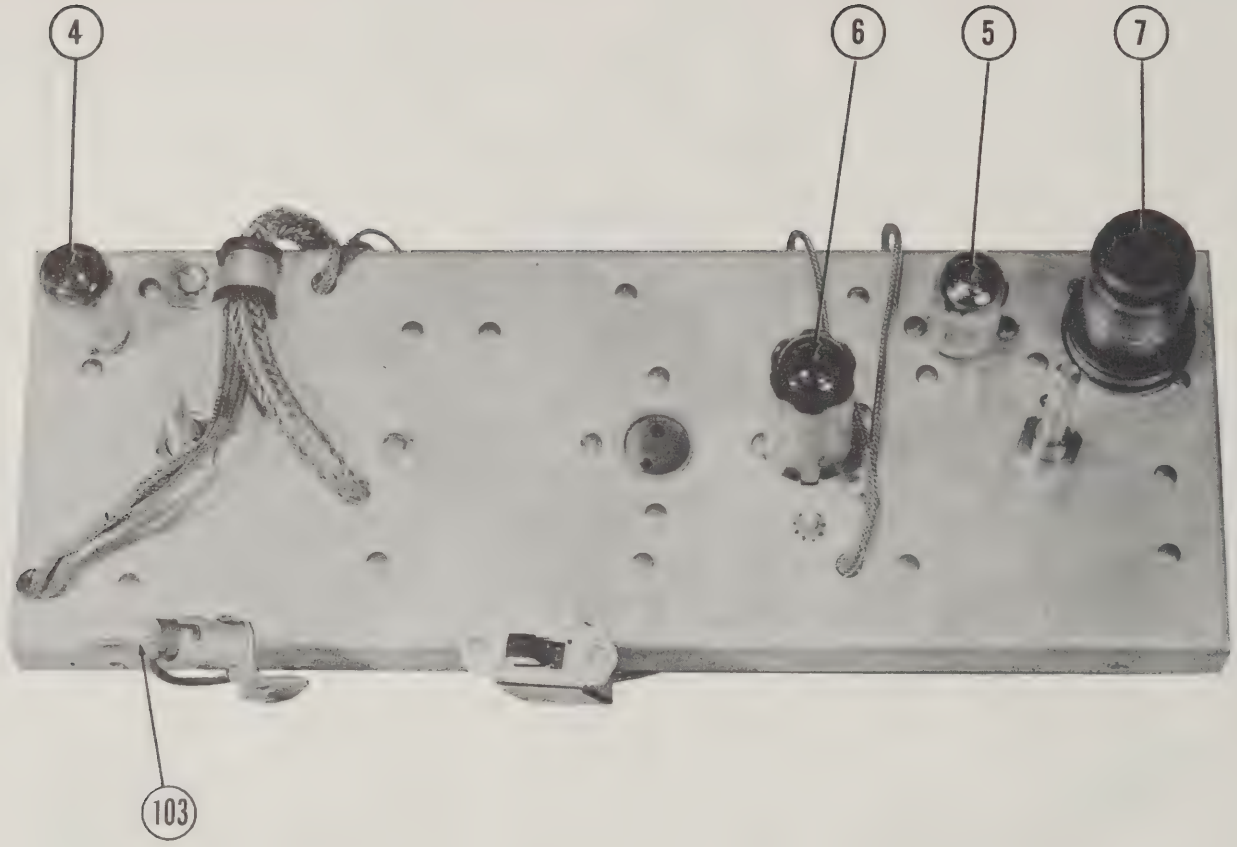
RESISTANCE READINGS

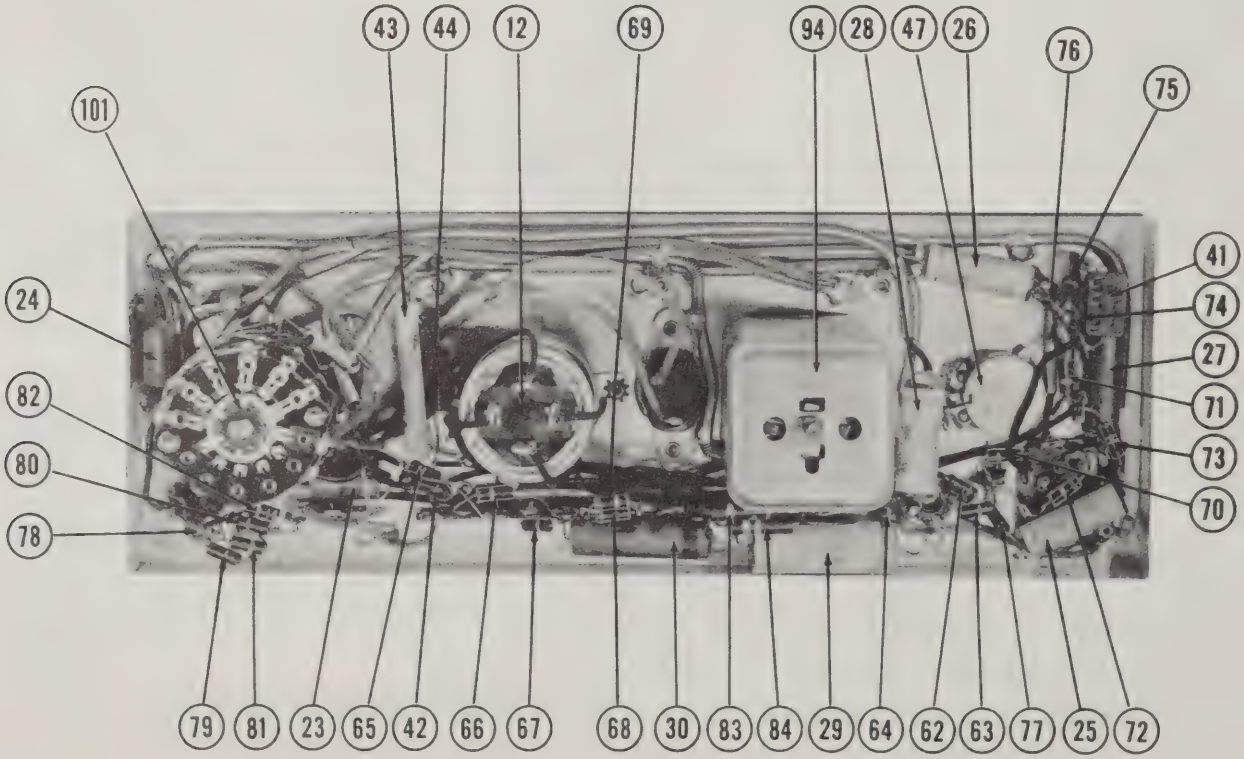
Item	Tube	Pin	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
4	6AU6	0Ω	1800Ω	0Ω	.2Ω	∞470KΩ	∞300KΩ	180Ω	
5	6C4	∞45KΩ	Inf.	.2Ω	0Ω	∞45KΩ	2MEG.		

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1949

499-10


4
6
5
7
103


43
44
12
69
94
28
47
26
76
75
101
41
24
74
27
82
71
80
73
70
78
79
81
23
65
42
66
67
68
30
83
84
29
64
62
63
77
25
72

GON-SET 3-30 METER CONVERTER

TRADE NAME	GON-SET, 3-30 Meter Converter
MANUFACTURER	Waterproof Electric Co., 70 E. Verdugo Ave., Burbank, Calif.
TYPE SET	3-30 Meter Mobile Converter
TUBES (FOUR)	Types 6BH6 RF Amp., 6AV6 Mixer, 6C4 Oscillator, 6BH6 IF Amplifier
POWER SUPPLY RATING	6.3 Volts "A" Supply and 130 Volts "B" Supply 1 Amp., @ 6.3 Volts DC and 12.5MA @ 130 Volts DC

PRELIMINARY ADJUSTMENTS

After converter has been installed and properly connected, turn both converter and auto set on. Turn the auto receiver to approximately 1500KC. If a broadcast station of sufficient signal strength "leaks through", slightly detune the auto set. If auto receiver has an antenna trimmer, peak it for maximum background noise with the converter tuned to a point of non-interference. No other adjustments are necessary.

GON-SET
3-30 METER CONVERTER

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-11 SET #61 FOLDER 11

PARTS LIST AND DESCRIPTIONS

GON-SET 3-30

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: GON-SET PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BH6	6BH6	7CM	
V2	Mixer	6AV6	6AV6	7FT	
V3	Oscillator	6C4	6C4	6BG	
V4	IF Amp.	6BH6	6BH6	7CM	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: GON-SET PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Cath. Bypass
C2	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Screen Bypass
C3	30			1468-000025	5W5Q3	GP1K-25	MO.5-43	MS-43	RF Coupling
C4	5			1468-000005	5W5V5	NP0K-5	MO.5-55	MS-55	Osc. Coupling
C5	10			1468-00001	5W5Q1	GP1K-10	MO.5-41	MS-41	Osc. Grid Cap.
C6	30				5R5Q3		MOS.5-43	MS-43	Fixed Trimmer
C7	30				5R5Q3		MOS.5-43	MS-43	" "
C8	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Osc. Plate Bypass
C9	30			1468-000025	5W5Q3	GP1K-25	MO.5-43	MS-43	RF Coupling
C10	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	" "
C11	30			1468-000025	5W5Q3	GP1K-25	MO.5-43	MS-43	Ant. Coupling
C12	.05	200		P288-05	GT2S5		ST-4-05	TM-15	Decoupling

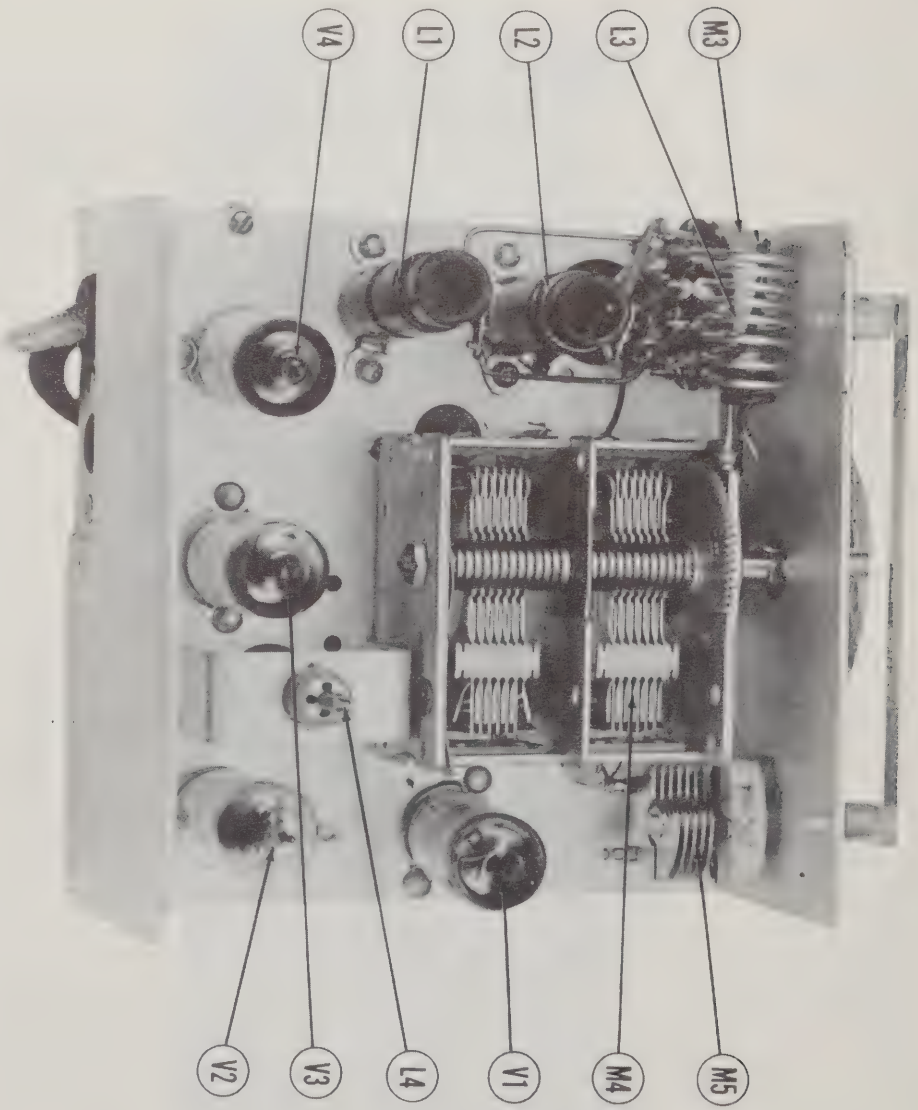
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: GON-SET PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES	
R1	100Ω	½			Br.-Blk.-Br.	RF Cathode
R2	2700Ω	½		BTS-2700	Red-Vi.-Red	RF Plate
R3	22KΩ	½		BTS-22K	Red-Red-Or.	Screen Dropping
R4	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	Mixer Grid
R5	220KΩ	½		BTS-220K	Red-Red-Yl.	Mixer Plate
R6	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Osc. Grid
R7	39KΩ	½		BTS-39K	Or.-White-Or.	IF Plate
R8	6800Ω	½		BTS-6800	Blue-Gray-Red	IF Grid
R9	1200Ω	½		BTS-1200	Br.-Red-Red	Decoupling

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: GON-SET PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	Ant. Coil	.2Ω	.2Ω			Band A
L2	Ant. Coil	.1Ω	.1Ω			Band B
L3	Ant. Coil	0Ω	0Ω			Band C
L4	Osc. Coil	.2Ω				
L5	RF Choke	.5Ω				3 RF Chokes in series.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

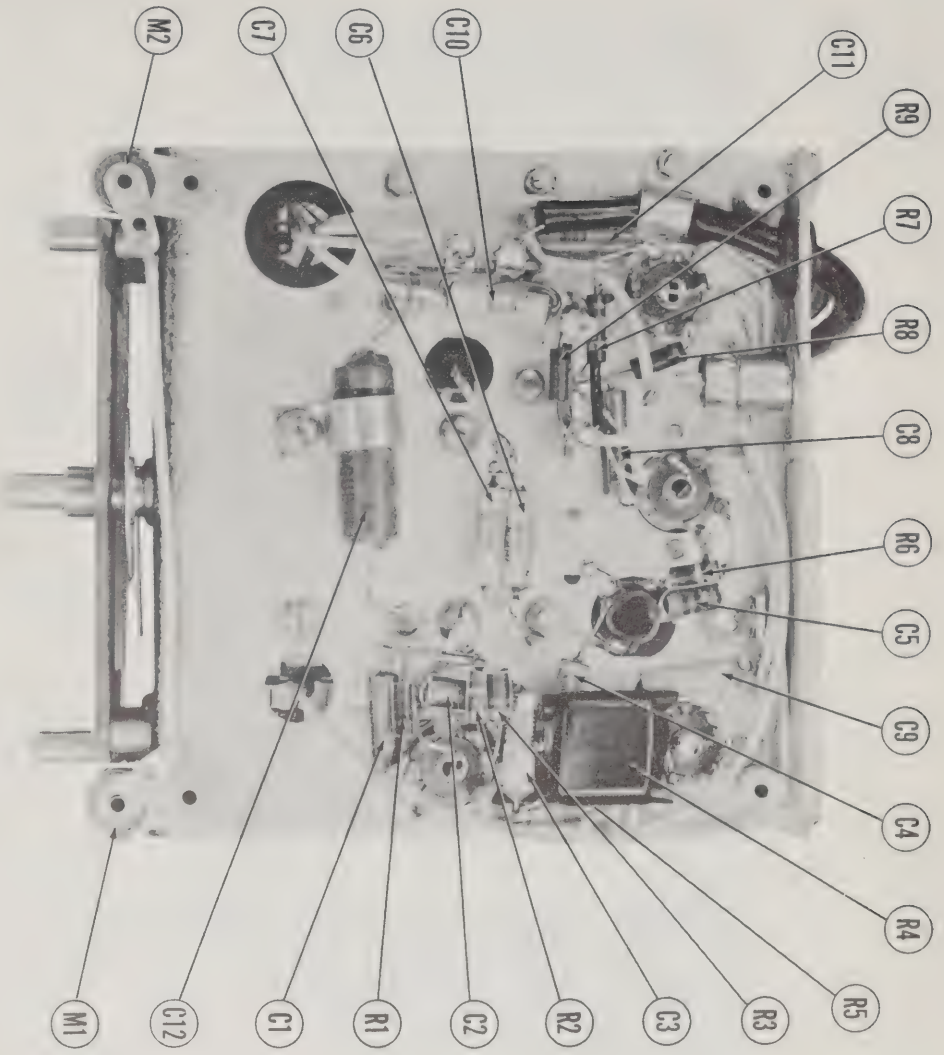
DIAL LIGHTS

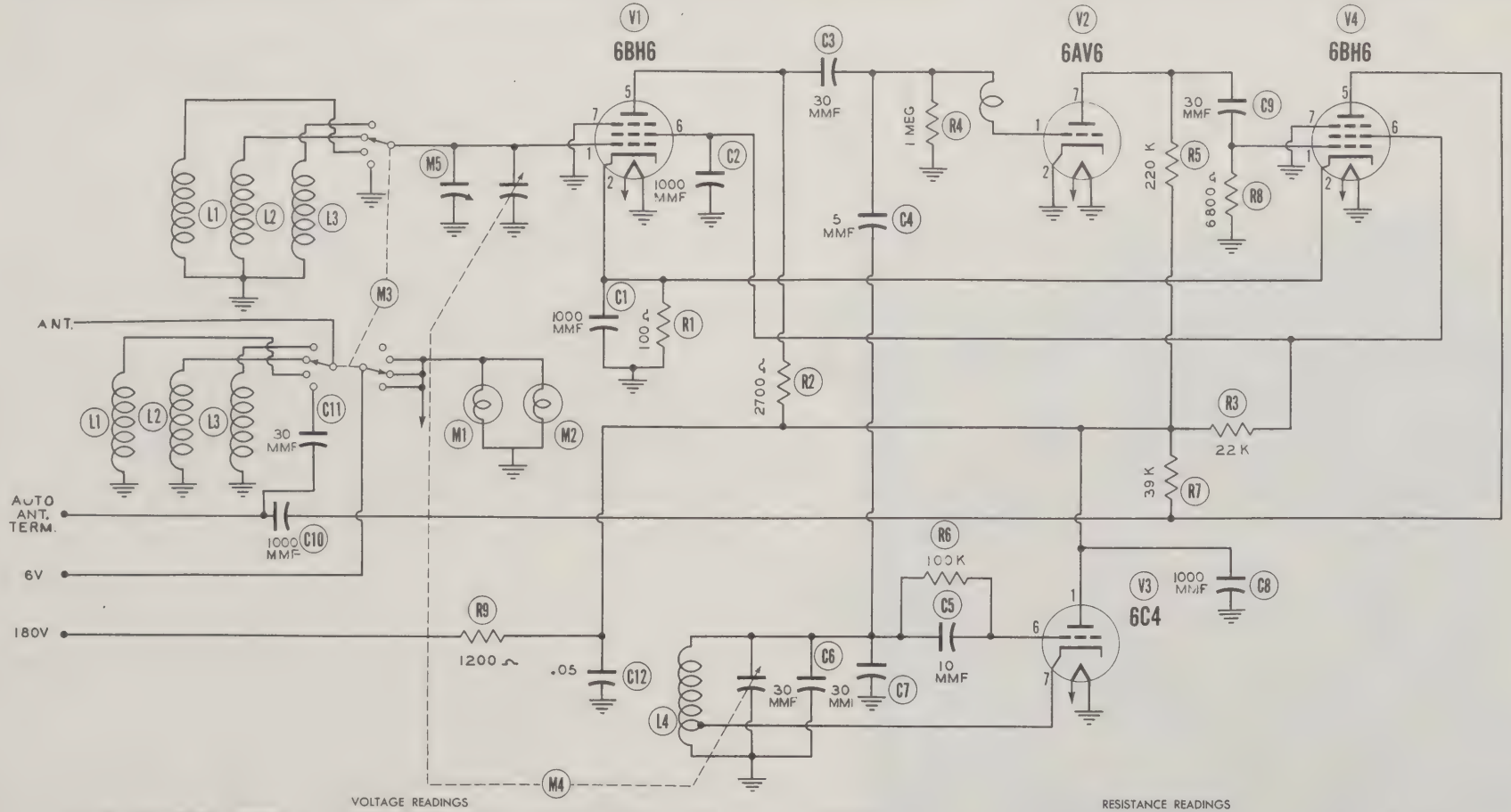
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					GON-SET PART No.		
M1	Bayonet	6-8V	0.15A	Brown			Type #47
M2	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	GON-SET PART No.	NOTES
M3	Switch		Band
M4	2 Gang Var. Cap.		Tuning
M5	Trimmer		Antenna

CHASSIS—BOTTOM VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BH6	0V	.6VDC	0V	6.3VDC	108VDC	60VDC	0V
V 2	6AV6	-1VDC	0V	0V	6.3VDC	-.5VDC	-.5VDC	60VDC
V 3	6C4	115VDC	0V	0V	6.3VDC	115VDC	§-5.2VDC	0V
V 4	6BH6	0V	.6VDC	0V	6.3VDC	38VDC	60VDC	0V

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin*4	Pin 5	Pin 6	Pin 7
V 1	6BH6	.2Ω	100Ω	0Ω	.7Ω	*3.6KΩ	.2KΩ	0Ω
V 2	6AV6	1 Meg.	0Ω	0Ω	.7Ω	Inf.	Inf.	300KΩ
V 3	6C4	*1200Ω	Inf.	0Ω	.7Ω	*1200Ω	100KΩ	0Ω
V 4	6BH6	6KΩ	100Ω	0Ω	.7Ω	*45KΩ	32KΩ	0Ω

* Measured from B+ input.

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

499-11

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. 130 volts DC B+ and 6.3 volts DC filament voltage.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

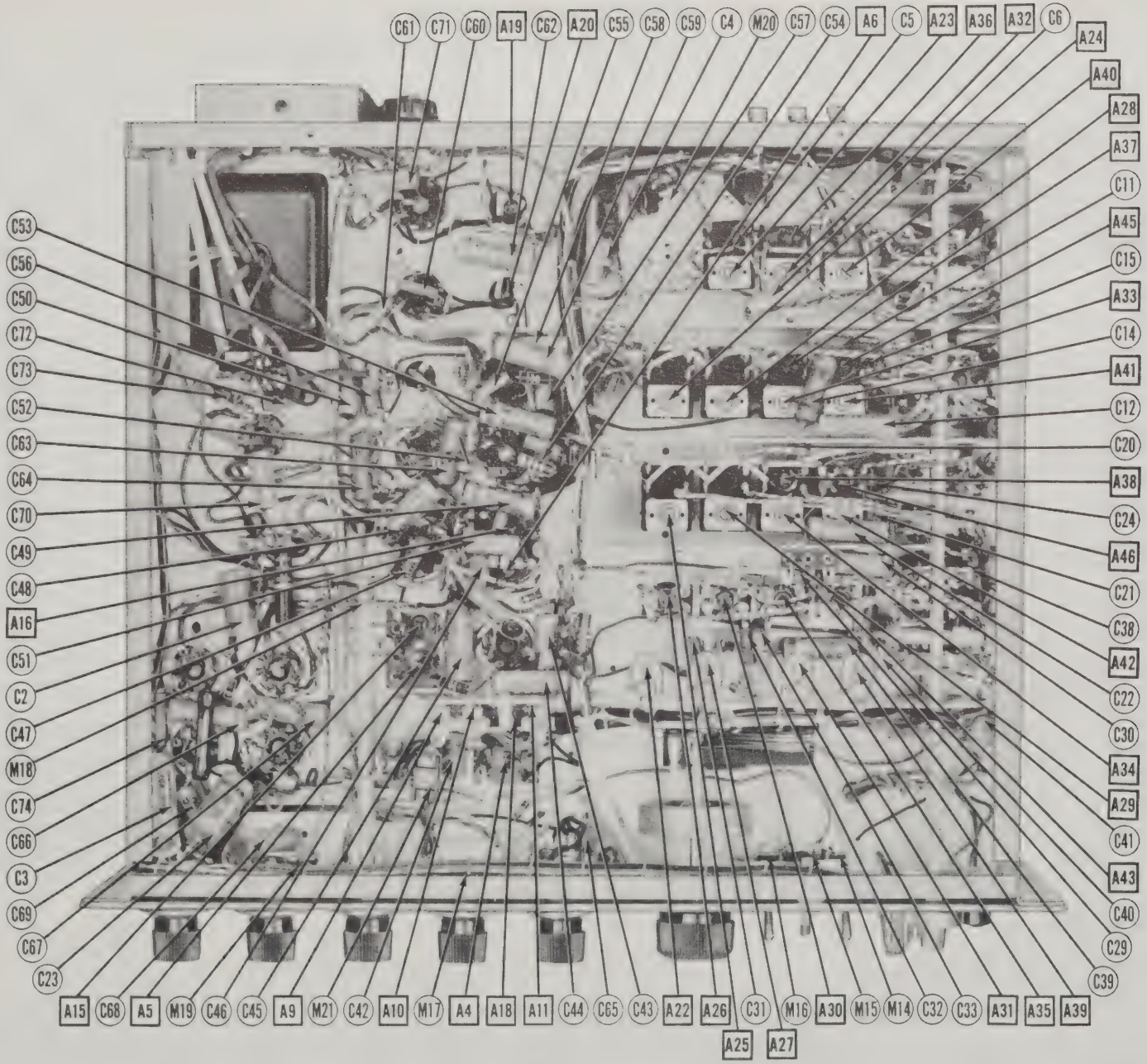
HALLICRAFTERS MODEL SX-62

TRADE NAME	Hallicrafters, Model SX-62
MANUFACTURER	The Hallicrafters Co., 5th & Kostner Avenues, Chicago 24, Illinois
TYPE SET	AC Operated Multi-Band AM-FM Superheterodyne Receiver
TUBES(SIXTEEN)	Types 6C4 XTAL Calib. Osc., 6AG5 1st RF Amp., 6AG5 2nd RF Amp., 7F8 Converter, 6SK7 1st IF Amp., 6SG7 2nd IF Amp., 7H7 3rd IF Amp., 7H7 4th FM IF Amp.-AM DET-AVC, 6H6 Discriminator, 7A4 CW Beat Osc. 6H6 Noise Limiter, 6SL7GT AF-Phase Inv. (2) 6V6GT Power Output, OD3/VR-150 Voltage Regulator, 5U4G Rectifier
POWER SUPPLY	105-125 Volts AC RATING .98 Amp., @ 117 Volts AC
TUNING RANGE	Band #1 550-1620KC, Band#2 1.62-4.9MC, Band#3 4.9-15MC, Band#4 15-32MC, Band#5 27-56MC AM-FM, Band#6 54-109MC AM-FM.

HALLICRAFTERS
MODEL SX-62

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-12 SET #61 FOLDER 12


C61
C71
C60
A19
C62
A20
C55
C58
C59
C4
M20
C57
C54
A6
C5
A23
A36
A32
C6
A24
A40
A28
A37
C11
A45
C15
A33
C14
A41
C12
C20
A38
C24
A46
C21
C38
A42
C22
C30
A34
A29
C41
A43
C40
C29
C39
C53
C56
C50
C72
C73
C52
C63
C64
C70
C49
C48
A16
C51
C2
C47
M18
C74
C66
C3
C69
C67
C23
A15
C68
A5
M19
C46
C45
A9
M21
C42
A10
M17
A4
A18
A11
C44
C65
C43
A22
A26
C31
M16
A30
M15
M14
C32
C33
A31
A35
A39
A25
A27

R53
R52
R77
R76
R79
R78
R80
R81
R50
C51
R55
R67
R23
R84
R48
R54
R89
R90
R83
R91
R82
R68
R86
R87
R2
R85
R88
R47
L28
R49
R46
R45
R44
R42
R43
R72
R71
R1
L20
L23
L24
L25
R33
R34
R35
R36
L26
L27
R41
R4
R27
R38
L18
R40
R32
L17
R26
R25
R22
R17
R92
R18
R19
L9
R11
L18
R64
L10
L19
L4
L11
L5
L12
L6
R14
R12
R15
R16
L35
R5
R60
R56
R73
R66
R65
R59
R58
R61
R74
R69
R75
R62
R70
R63
R57
R3
R6
R13

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HALLICRAFTERS PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	XTAL Calib.Osc.	6C4	6C4	6BG	
V2	1st RF Amp.	6AG5	6AG5	7BD	
V3	2nd RF Amp.	6AG5	6AG5	7BD	
V4	Converter	7F8	7F8	8BW	
V5	1st IF Amp.	6SK7	6SK7	8N	
V6	2nd IF Amp.	6SG7	6SG7	8BK	
V7	3rd IF Amp.	7H7	7H7	8V	
V8	4th FM IF Amp. AM-DET-AVC	7H7	7H7	8V	
V9	Discriminator	6H6	6H6	7Q	
V10	CW Beat Osc.	7A4	7A4	5AC	
V11	Noise Limiter	6H6	6H6	7Q	
V12	AF-Phase Inv.	6SL7GT	6SL7GT	8BD	
V13	Power Output	6V6GT	6V6GT	7AC	
V14	Power Output	6V6GT	6V6GT	7AC	
V15	Voltage Regulator	OD3/VR-150	OD3/VR-150	4AJ	
V16	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: HALLICRAFT. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	450	45A041§	AF444J4A	UP4445C		DY-313	EL-330	◓ Filter
B	20	450							■ ▲ Filter
C	20	25							Output Cath. Bypass
C2	10	25	45A121	PRS25/10	BR102A		M-10-25	TA-10	AF Cath. Bypass
C3	100	25	45A116	PRS25/100	BRH251		M-100-25	UHC-102	Cathode Bypass
C4	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	XTAL Cal. Plate Bypass
C5	2		47A160-4			NPOK-3			RF Coupling
C6	.05	200	49A091	P288-05	GT2S5		ST-4-05	68P16	AVC Filter
C7	5		CC20UK050D	1469-000005	5R5V5	NPOK-5	MOS.5-55	MS-55	Fixed Trimmer
C8	7		CC20UK070K				" "	" "	
C9	.05	200	49A091	P288-05	GT2S5		ST-4-05	68P16	1st RF Cath. Bypass
C10	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	1st RF Screen Bypass
C11	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	68P34	1st RF Plate Decoup.
C12	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	68P34	" " " "
C13	5600	500	CM35A562M	1467-006	1D5D6	GP2M-005	MW.5-26	1FM-26	" " " "
C14	.05	200	46AU503J	P288-05	GT2S5		ST-4-05	68P16	AVC Filter
C15	2		47A160-4						RF Coupling
C16	15		CC20UK150K					MS-415	Fixed Trimmer
C17	7		CC20UK070K				" "	" "	
C18	.05	200	46AU503J	P288-05	GT2S5		ST-4-05	68P16	2nd IF Cath. Bypass
C19	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	2nd IF Screen Bypass
C20	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	68P34	2nd IF Plate Decoup.
C21	5600	500	CM35A562M	1467-006	1D5D6	GP2M-005	MW.5-26	1FM-26	" " " "
C22	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	68P34	" " " "
C23	.25	200	46AT254J	P488-25	GT2P25		ST-2-25	68P24	Cathode Bypass
C24	2		47A160-4			NPOK-3			RF Coupling
C25	15		CC20UK150K					MS-415	Fixed Trimmer
C26	7		CC20UK070K						
C27	47	500	CM20A470K	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Coupling
C28	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	Mixer Cath. Bypass
C29	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	" " "
C30	.01	600	46AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	68P33	" " "
C31	470	500	CM20A471G						Fixed Padder
C32	1500	500	CM30C152G	1464-0015	1R5D15		MWS.5-215		" "
C33	4700	500	CM35C472G						" "
C34	7		CC20UK070K						Fixed Trimmer
C35	5		CC20UK050D	1469-000005	5R5V5	NPOK-5	MOS.5-55	MS-55	" "
C36	220	500	CM25E221G						Fixed Padder
C37	110		CC25UK111J	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Grid Cap.
C38	110		CC25UK111J	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Feedback
C39	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	68P34	Osc. Plate Decoupling
C40	15		CC20UK150K					MS-415	Fixed Trimmer Note
C41	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	Mixer Plate Decoup.
C42	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	AVC Filter
C43	.05	200	46AU503J	P288-05	GT2S5		ST-4-05	TM-15	1st IF Cath. Bypass

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: HALLICRAFTER PART No.	IRC PART No.	IDENTIFICATION CODES	
R27	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	2nd RF Decoupling
R28	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	RF Coil Shunt
R29	2.2 Meg.	½	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn.	Converter Grid
R30	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	Converter Cathode
R31	47Ω	½	RC20AE470M		Yl.-Vi.-Blk.	Parasitic Suppressor
R32	2200Ω	½	RC20AE222M	BTS-2200	Red-Red-Red	2nd RF Decoupling
R33	56Ω	½	RC20AE560K		Grn.-Blue-Blk.	Osc. Coil Shunt
R34	4700Ω	½	RC20AE472K	BTS-4700	Yl.-Vi.-Red	Osc. Grid
R35	4700Ω	½	RC20AE472K	BTS-4700	Yl.-Vi.-Red	" "
R36	33Ω	½	RC20AE330M		Or.-Or.-Blk.	Osc. Coil Shunt
R37	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	" " "
R38	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	" " "
R39	10KΩ	½	RC20AE103K	BTS-10K	Br.-Blk.-Or.	Osc. Grid
R40	5600Ω	1	RC30AE562K	BTA-5600	Grn.-Blue-Red	Osc. Plate
R41	470Ω	½	RC20AE471M	BTS-470	Yl.-Vi.-Br.	Osc. Plate Decoupling
R42	68KΩ	1	RC30AE683K	BTA-68K	Blue-Gray-Or.	Mixer Decoupling
R43	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	AVC Network
R44	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Br.-Blk.-Grn.	" "
R45	270Ω	½	RC20AE271K		Red-Vi.-Br.	1st IF Cathode
R46	56KΩ	1	RC20AE563	BTA-56K	Grn.-Blue-Or.	1st IF Screen Decoupling
R47	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	1st IF Decoupling
R48	1.2 Meg.	½	RC20AE125K	BTS-1.2 Meg.	Br.-Red-Grn.	AVC Network
R49	330Ω	½	RC20AE331K		Or.-Or.-Br.	2nd IF Cathode
R50	56KΩ	1	RC20AE563	BTA-56K	Grn.-Blue-Or.	2nd IF Screen Decoupling
R51	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	2nd IF Plate Decoupling
R52	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	AVC Network
R53	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Br.-Blk.-Grn.	" "
R54	68KΩ	½	RC20AE683K	BTS-68K	Blue-Gray-Or.	3rd IF Coil Shunt
R55	2.2 Meg.	½	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn.	3rd IF Grid
R56	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	Limiter Decoupling
R57	1800Ω	½	RC20AE182K	BTS-1800	Br.-Gray-Red	3rd IF Cathode
R58	47KΩ	1	RC30AE473K	BTA-47K	Yl.-Vi.-Or.	3rd IF Screen Decoupling
R59	10KΩ	1	RC30AE103K	BTA-10K	Br.-Blk.-Or.	3rd IF Plate
R60	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	3rd IF Decoupling
R61	47KΩ	½	RC20AE473K	BTS-47K	Yl.-Vi.-Or.	Limiter Grid
R62	47KΩ	½	RC20AE473K	BTS-47K	Yl.-Vi.-Or.	" "
R63	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	" "
R64	100Ω	½	RC20AE101K		Br.-Blk.-Br.	3rd IF Cathode
R65	56KΩ	1	RC20AE563	BTA-56K	Grn.-Blue-Or.	Limiter Decoupling
R66	330Ω	½	RC20AE331K		Or.-Or.-Br.	Limiter Plate Decoupling
R67	220Ω	2	RC40AE221K	BW-2-220	Red-Red-Br.	Output Cathode
R68	2000Ω	10	24BG202D	AB-2000		Filter
R69	47KΩ	½	RC20AE475K	BTS-47K	Yl.-Vi.-Or.	Disc. Coil Shunt
R70	150KΩ	½	RC20AE154K	BTS-150K	Br.-Grn.-Yl.	De-emphasis
R71	1.5 Meg.	½	RC20AE155K	BTS-1.5 Meg.	Br.-Grn.-Grn.	AF Load
R72	120Ω	½	RC20AE121K	BW-½-120	Br.-Red-Br.	AVC Shunt
R73	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	Beat Osc. Plate Decoupling
R74	5100Ω	½	RC20AE512J		Grn.-Br.-Red	Beat Osc. Cathode 5%
R75	47KΩ	½	RC20AE473K	BTS-47K	Yl.-Vi.-Or.	Beat Osc. Grid
R76	6.8Ω	1	RC30AE068K	BW-1-6.8	Blue-Gray-Gold	Noise Limiter Filament
R77	2.2 Meg.	½	RC20AE225M	BTS-2.2 Meg.	Red-Red-Grn.	Noise Limiter Load
R78	100KΩ	½	RC20AE104M	BTS-100K	Br.-Blk.-Yl.	Voltage Divider
R79	330KΩ	½	RC20AE334K	BTS-330K	Or.-Or.-Yl.	" "
R80	1 Meg.	½	RC20AE105M	BTS-1 Meg.	Br.-Blk.-Grn.	Voltage Divider
R81	470KΩ	½	RC20AE474K	BTS-470K	Yl.-Vi.-Yl.	Noise Limiter Load
R82	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	AF Cathode
R83	56Ω	½	RC20AE560K	BW-½-56	Grn.-Blue-Blk.	Feedback Network
R84	10KΩ	½	RC20AE103K	BTS-10K	Br.-Blk.-Or.	" "
R85	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	Phase Inverter Cathode
R86	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	AF Plate
R87	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	Phase Inverter Plate
R88	1000Ω	2	RC40AE102K	BT-2-1000	Br.-Blk.-Red	Feedback Network
R89	8200Ω	½	RC20AE822K	BTS-8200	Gray-Red-Red	Phase Inverter Grid
R90	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	Output Grid
R91	220KΩ	½	RC20AE224K	BTS-220K	Red-Red-Yl.	" "
R92	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	RF Coil Shunt See Note 1

Note. Some models use two 47Ω resistors in parallel.
Note 1. Not used in all models.

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HALLICRAFTERS PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C44	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	1st IF Screen Bypass
C45	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	1st IF Plate Decoup.
C46	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AVC Filter
C47	.05	200	46AY503J	P288-05	GT2S5		ST-4-05	TM-15	2nd IF Cath. Bypass
C48	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	2nd IF Screen Bypass
C49	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	2nd IF Plate Decoup.
C50	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AVC Filter
C51	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	3rd IF Grid Filter
C52	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	3rd IF Cath. Bypass
C53	.02	600	46AY302J	P688-02	GT6S2		ST-6-02	TM-12	3rd IF Screen Bypass
C54	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	3rd IF Plate Decoup.
C55	180	500	CM20A181K	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode Filter
C56	180	500	CM20A181K	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	" "
C57	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	4th IF Screen Bypass
C58	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	4th IF Plate Decoup.
C59	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	Decoupling
C60	47	500	CM20A470K	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Bypass
C61	560	500	CM25A561K	1468-0005	1W5T6	GP2K-500	MO.5-36	MS-36	De-emphasis
C62	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	CW Beat Osc. Plate Dec.
C63	.05	200	46AY503J	P288-05	GT2S5		ST-4-05	TM-15	Audio Coupling
C64	.05	200	46AY503J	P288-05	GT2S5		ST-4-05	TM-15	Tone Comp.
C65	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C66	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	" "
C67	.02	600	46AY203J	P688-02	GT6S2		ST-6-02	TM-12	" "
C68	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	Tone Comp.
C69	.05	600	46AY503J	P688-05	GT6S5		ST-6-05	TM-15	" "
C70	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	RF Bypass
C71	.01	600	43AZ103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Switch Bypass
C72	.01	600	46BR103J	P688-01	GT6S1		ST-6-01	TM-11	Line Filter
C73	.01	600	46BR103J	P688-01	GT6S1		ST-6-01	TM-11	Line Filter
C74	680	500	CM25A681K	1468-00075	1W5T7	GP2K-750	MO.5-37	1FM-37	Output Grid Bypass

§ Two 10MFD sections connected in parallel.
Note. Not used in all models.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	25A549	D13-137	M-63-Z	Volume control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	41	SW-A	Attach to R1A Per Instructions
R2	10KΩ	½	25A548		M-27-S	Sensitivity control

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HALLICRAFTERS PART No.	IRC PART No.	IDENTIFICATION CODES	
R3	4.7 Meg.	½	RC20AE475K	BTS-4.7 Meg.	Yl.-Vi.-Grn.	Crystal Oscillator Grid
R4	470KΩ	½	RC20AE474M	BTS-470K	Yl.-Vi.-Yl.	Crystal Oscillator Voltage Dropping
R5	27KΩ	2	RC40AE273K	BT-2-27K	Red-Vi.-Or.	Crystal Oscillator Plate Decoup.
R6	100KΩ	½	RC20AE104M	BTS-100K	Br.-Blk.-Yl.	Ant. Coil Shunt
R7	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	" " "
R8	12Ω	½	RC20AE120K		Br.-Red-Blk.	Parasitic Suppressor
R9	150Ω	½	RC20AE151K		Br.-Grn.-Br.	1st RF Cathode
R10	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	RF Coil Shunt
R11	2200Ω	½	RC20AE222M	BTS-2200	Red-Red-Red	1st RF Decoupling
R12	1200Ω	½	RC20AE122K	BTS-1200	Br.-Red-Red	1st RF Decoupling
R13	330Ω	½	RC20AE331M		Or.-Or.-Br.	Parasitic Suppressor
R14	2.2 Meg.	½	RC20AE225K	BTS-2.2 Meg.	Red-Red-Grn.	AVC Network
R15	5.6 Meg.	½	RC20AE565K	BTS-5.6 Meg.	Grn.-Blue-Grn.	" "
R16	470KΩ	½	RC20AE474M	BTS-470K	Yl.-Vi.-Yl.	" "
R17	100KΩ	½	RC20AE104M	BTS-100K	Br.-Blk.-Yl.	RF Coil Shunt
R18	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	" " "
R19	2200Ω	½	RC20AE222M	BTS-2200	Red-Red-Red	1st RF Decoupling
R20	150Ω	½	RC20AE151K		Br.-Grn.-Br.	2nd RF Cathode
R21	15Ω	½	RC20AE150M		Br.-Grn.-Blk.	Parasitic Suppressor See Note
R22	47KΩ	1	RC30AE473K	BTA-47K	Yl.-Vi.-Or.	2nd RF Decoupling
R23	100KΩ	1	RC30AE104K	BTA-100K	Br.-Blk.-Yl.	Voltage Divider
R24	1000Ω	½	RC20AE102M	BTS-1000	Br.-Blk.-Red	1st RF Plate Decoupling
R25	330Ω	½	RC20AE131M		Or.-Or.-Br.	Parasitic Suppressor
R26	2200Ω	½	RC20AE222M	BTS-2200	Red-Red-Red	2nd RF Decoupling

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1A	117VAC @ .98A	550VAC CT @ .148A	5VAC 3A	6.3VAC 4.7A	52C141	P-6314 *	PH-200 *	
B	115/230 VAC @ 25/60 Cycles				52C131			

* Add series resistor to reduce plate voltage.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T2	6000Ω CT	500Ω TAP @ 500Ω	480Ω CT	270Ω TAP @ 27Ω	55B077				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
L1	.080A	290Ω	17H	56B067	C-1709	R-8120#	C-2990#	# Drill one new mounting hole.

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HALLICRAFTERS PART No.	MEISSNER PART No.	
L2	Ant. Coil	0Ω	0Ω	51B829		Band 6
L3	Ant. Coil	0Ω	0Ω	51B828		Band 5
L4	Ant. Coil	0Ω	0Ω	51B990		Band 4
L5	Ant. Coil	0Ω	0Ω	51B826		Band 3
L6	Ant. Coil	32Ω	.2Ω	51B823		Band 1
L7	1st RF Coil	0Ω	0Ω	51B833		Band 6
L8	1st RF Coil	0Ω	0Ω	51B832		Band 5
L9	1st RF Coil	1.5Ω	0Ω	51B989		Band 4
L10	1st RF Coil	.1Ω	0Ω	51B987		Band 3
L11	Ant. Coil	0Ω	0Ω	51B825		Band 2
L12	1st RF Coil	.2Ω	.1Ω	51B824		Band 1
L13	RF Screen Chk.	0Ω		37A117		Wound on 330Ω res.
L14	RF Screen Chk.	0Ω		37A117		Wound on 330Ω res.
L15	2nd RF Coil	0Ω	0Ω	51B833		Band 6
L16	2nd RF Coil	0Ω	0Ω	51B844		Band 5
L17	2nd RF Coil	.1Ω	0Ω	51B899		Band 4
L18	2nd RF Coil	.3Ω	.1Ω	51B988		Band 3
L19	1st RF Coil	.1Ω	0Ω	51B986		Band 2
L20	2nd RF Coil	.1Ω	0Ω	51B985		Band 1
L21	Osc. Coil	0Ω	0Ω	51B839		Band 6
L22	Osc. Coil	0Ω	0Ω	51B838		Band 5
L23	Osc. Coil	0Ω	0Ω	51B991		Band 4
L24	Osc. Coil	.2Ω	0Ω	51B836		Band 3
L25	Osc. Coil	0Ω	.8Ω	51B835		Band 2
L26	Osc. Coil	0Ω	1.8Ω	51B834		Band 1
L27	RF Plate Chk.	2Ω		53B008		
L28	Fil. Choke	.2Ω		53A009		
L29A	FM 1st IF	.8Ω	.8Ω	50C198		
B	AM 1st IF	1Ω	13Ω			
L30A	FM 2nd IF	12Ω †	1Ω	50C190		† Include AM Pri. winding Tertiary winding .5Ω
B	AM 2nd IF					
L31A	FM 3rd IF		.8Ω	50C373		
B	AM 3rd IF	‡ 10Ω	9Ω			‡ Includes FM Pri. winding
L32	IF Coupling			53B104		
L33	FM Disc. XFMR	.2Ω	.2Ω	50C191		
L34	BFO Coil	0Ω		54C032		
L35	RF Plate	25Ω		53A139		

DATE 5/49 499-12 SET #61 FOLDER 12

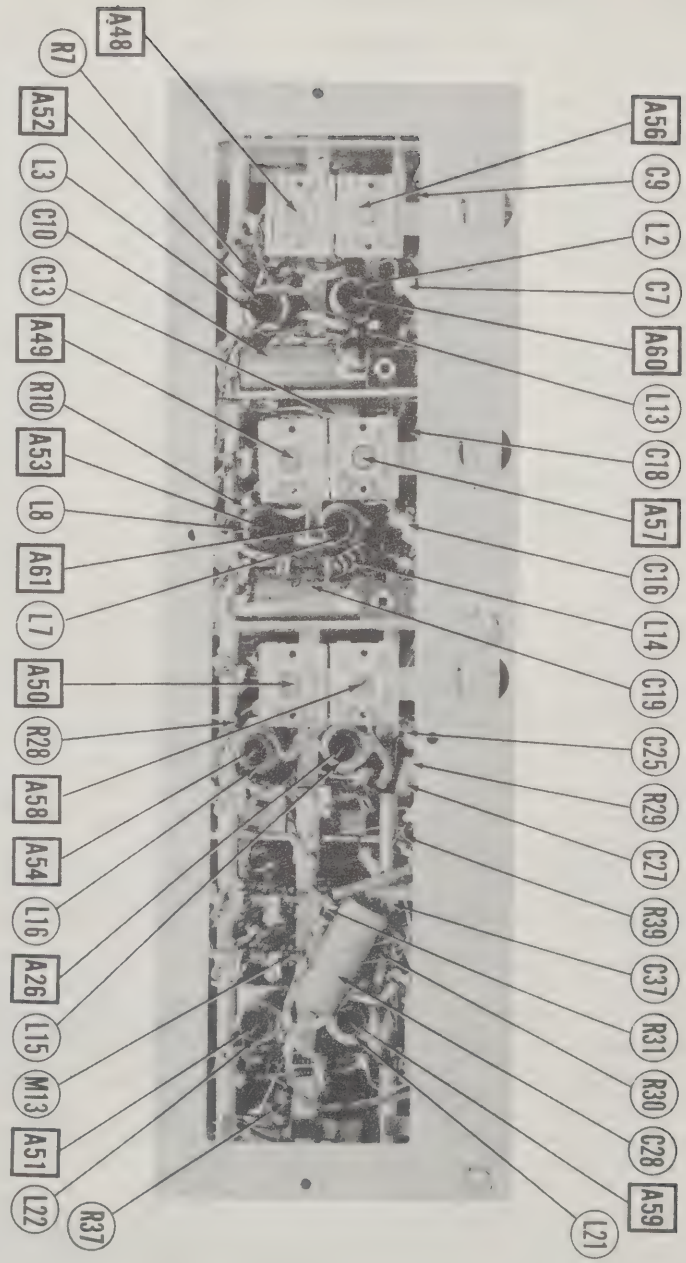
PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					HALLI-CRAFTERS PART No.		
M1 to M12	Bayonet	6-8V	0.25A	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTERS PART No.	NOTES
M13	Switch	60B329	Selector
M14	"	60A138	Standby
M15	"	60A138	XTAL. Calib.
M16	"	60A138	Noise Limiter
M17	"	60C330	Reception
M18	"	60A234	Selectivity
M19	"	60C236	Tone
M20	Crystal	19A123	455KC
M21	"	19A1211	500KC
M22	Tuning Gang	48C204	
	Trimmer	44A078	A8, A47, A55
	"	44B164	A9, A10, A11
	"	44A076	A22
	"	44A047	A27, A31
	"	44A347	A39
	Dual Trimmers	44B165	(A48, A56), (A49, A57), (A50, A58)
	Dial Scale	22D215	
	Dial Pointer	67B835	
	Knob	15A088-2	Band Selector
	"	15A045	Reception
	"	15A063	Selectivity
	"	15A062	Tone
	"	15A064	Sensitivity
	"	15A047	Tuning
	"	15A074-1	Pointer Reset
	"	15A097	Volume



ALIGNMENT INSTRUCTIONS

IF ALIGNMENT

Pre-set the front panel controls as follows:

Receive/standby	Receive
Calib. Xtal	Off
Noise Limiter	Off
Volume	Near Maximum
Reception	AM
Selectivity	Normal/Sharp
Sensitivity	Near Maximum

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 1 (Grid) 7F8 (V4). Low side to chassis	455KC	Band 1	1000KC	Across voice coil	A1, A2 A3, A4 A5, A6	Adjust for maximum output.
2	Set reception switch at "CW" and adjust A7 for 1000∿ note.							
3	Set selectivity control to crystal/broad. Turn A4 slowly in one direction across the resonant setting obtained above and "rock" the signal generator observing the dip in the output meter reading. The correct setting of A4 is in center of the observed dip. Set the signal generator at the weaker of the two peaks obtained on either side of zero beat and adjust A8 (crystal phasing trimmer) for the null.							
4	Set selectivity control to crystal/sharp and A9 near minimum capacity, Slowly increase its capacity while "rocking" the signal generator and adjust for maximum output. It may be necessary to reduce the signal generator input and the receiver sensitivity to prevent overloading. After peaking A9, turn it in until a 2 db. drop in output occurrs.							
5	Tune signal generator to the exact crystal frequency and note output meter reading. Set selectivity control to crystal/broad position and note the drop in output reading. Switch to crystal/medium position and with A10 pre-set near minimum capacity, slowly increase its capacity, while "rocking" the signal generator, until output meter reads half way between output readings obtained in the sharp crystal and broad crystal positions.							
6	Set reception switch to "AM" and the selectivity control to crystal/sharp and set signal generator to the exact crystal frequency. Switch to normal/sharp position and reset A1, A2, A3, A5, A6, and A11 for maximum output.							
7	Set reception switch to "CW" and adjust A7 for zero beat.							
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
8.	.1MFD	High side to Pin 1 (Grid) 7F8 (V4). Low side to chassis.	10.7MC (AM) (400∿ MOD)	Band 5	Mid Scale	Across voice coil	A12, A13, A14, A15, A16	Adjust for maximum output.
9.	.1MFD	"	"	"	"	"	A17, A18	Adjust for maximum output. Do not readjust A12 thru A16.
10	Remove 400∿ modulation and set reception control to "CW". Adjust A19 for zero beat.							
11	Add 400∿ modulation, turn reception control to "FM" and adjust A20 for maximum output.							
12	Adjust A21 for the null or minimum indication on the output meter. Slowly tune signal generator thru 10.7MC and note the two maximum readings on the output meter. If the peaks are equal, the discriminator transformer is properly aligned. If not, it may be necessary to readjust A20 until reasonable balance is obtained.							

Connect signal generator high side thru RMA dummy to A-1 on antenna terminal strip and place a jumper across the "A-2" and "GND". terminals. Use only enough signal from generator to give a 500 milliwatt output reading for best results.

The RMA dummy antenna consists of a 200MMF capacitor in series with a 20UH. RF choke which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
13.	RMA Dummy	High side to "A1" on Ant. terminal strip. Low side to chassis.	1500KC	Band 1	1500KC	Across voice coil	A22, A23, A24, A25	Adjust for maximum output.
14.	RMA Dummy	"	600KC	"	600KC	"	A26	" " " "
15.	RMA Dummy	"	4.5MC	Band 2	4.5MC	"	A27, A28, A29	" " " "
16.	RMA Dummy	"	2.0MC	"	2.0MC	"	A30	" " " "
17.	RMA Dummy	"	14.0MC	Band 3	14.0MC	"	A31, A32, A33, A34	" " " "
18.	RMA Dummy	"	7.0MC	"	7.0MC	"	A35, A36, A37, A38	" " " "
19.	RMA Dummy	"	28.0MC	Band 4	28.0MC	"	A39, A40, A41, A42	" " " "
20.	RMA Dummy	"	18.0MC	"	18.0MC	"	A43, A44, A45, A46	" " " "
21.	300Ω carbon res.	High side thru 300Ω to "A1". Low side to chassis.	50.0MC	Band 5	50.0MC	"	A47, A48, A49, A50	" " " "
22.	300Ω carbon res.	"	30.0MC	"	30.0MC	"	A51, A52, A53, A54	" " " "
23.	300Ω carbon res.	"	105MC	Band 6	105MC	"	A55, A56, A57, A58	" " " "
24.	300Ω carbon res.	"	60MC	"	60MC	"	A59, A60, A61, A62	" " " "

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6C4	23VDC	0V	0V	6.3VAC	23VDC	-.4VDC	0V	
2	6AG5	0V	1.6VDC	0V	6.3VAC	235VDC	155VDC	1.6VDC	
3	6AG5	-.1VDC	1.6VDC	0V	6.3VAC	240VDC	175VDC	1.6VDC	
4	7F8	-2VDC	0V	85VDC	1VDC	0V	125VDC	6.3VAC	§-2.4VDC
5	6SK7	0V	6.3VAC	0V	0V	3.2VDC	100VDC	0V	240VDC
6	6SG7	0V	6.3VAC	2.8VDC	0V	2.8VDC	140VDC	0V	240VDC
7	7H7	0V	225VDC	200VDC	0V	0V	0V	7.6VDC	6.3VAC
8	7H7	0V	50VDC	50VDC	0V	0V	-.5VDC	0V	6.3VAC
9	6H6	0V	0V	-5.7VDC	1.8VDC	-.8VDC	0V	6.3VAC	0V
10	7A4	0V	150VDC	0V	0V	0V	16.5VDC	28VDC	6.3VAC
11	6H6	0V	0V	-.1VDC	-.1VDC	0V	-.2VDC	4.5VAC	0V
12	6SL7GT	0V	85VDC	.9VDC	0V	85VDC	.9VDC	6.3VAC	0V
13	6V6GT	0V	0V	270VDC	240VDC	0V	0V	6.3VAC	14.5VDC
14	6V6GT	0V	0V	270VDC	240VDC	0V	0V	6.3VAC	14.5VDC
15	OD3/VR-150	155VDC	0V	155VDC	0V	155VDC	0V	155VDC	0V
16	5U4G	0V	280VDC	0V	270VAC	0V	270VAC	250VDC	280VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6C4	*500KΩ	0Ω	0Ω	.2Ω	* 500KΩ	4.7 Meg.	0Ω	
2	6AG5	2 Meg.	Inf.	0Ω	.2Ω	*3.5KΩ	*3.5KΩ	170Ω	
3	6AG5	1.8Meg.	Inf.	0Ω	.2Ω	*1.2KΩ	*47KΩ	170Ω	
4	7F8	2.2 Meg.	0Ω	*70KΩ	1000Ω	0Ω	*9KΩ	.2Ω	10KΩ
5	6SK7	0Ω	.2Ω	0Ω	2.2 Meg.	270Ω	*60KΩ	0Ω	*1.5KΩ
6	6SG7	0Ω	.2Ω	330Ω	2.5 Meg.	330Ω	60KΩ	0Ω	*1.5KΩ
7	7H7	0Ω	*11KΩ	*50KΩ	0Ω	0Ω	2.2 Meg.	1.8KΩ	.2Ω
‡ 8	7H7	0Ω	*58 KΩ	*58KΩ	0Ω	0Ω	240KΩ	0Ω	.2Ω
‡ 9	6H6	0Ω	0Ω	120KΩ	200KΩ	120KΩ	Inf.	.2Ω	0Ω
† 10	7A4	0Ω	*160KΩ	10Ω	Inf.	Inf.	55KΩ	5KΩ	.2Ω
‡ 11	6H6	0Ω	0Ω	2.2Meg.	1.7 Meg.	Inf.	150KΩ	2.8Ω	Inf.
12	6SL7GT	1 Meg.	*220KΩ	1.3KΩ	8.2KΩ	* 220KΩ	1.2KΩ	.2Ω	0Ω
13	6V6GT	0Ω	0Ω	*200Ω	*280Ω	220KΩ	10KΩ	.2Ω	220Ω
14	6V6GT	0Ω	0Ω	*230Ω	*280Ω	220KΩ	56Ω	.2Ω	220Ω
15	OD3/VR-150	* 2.2KΩ	0Ω	*2.2KΩ	220KΩ	*2.2KΩ	Inf.	*2.2KΩ	Inf.
16	5U4G	Inf.	60KΩ	Inf.	60Ω	Inf.	56Ω	45KΩ	50KΩ

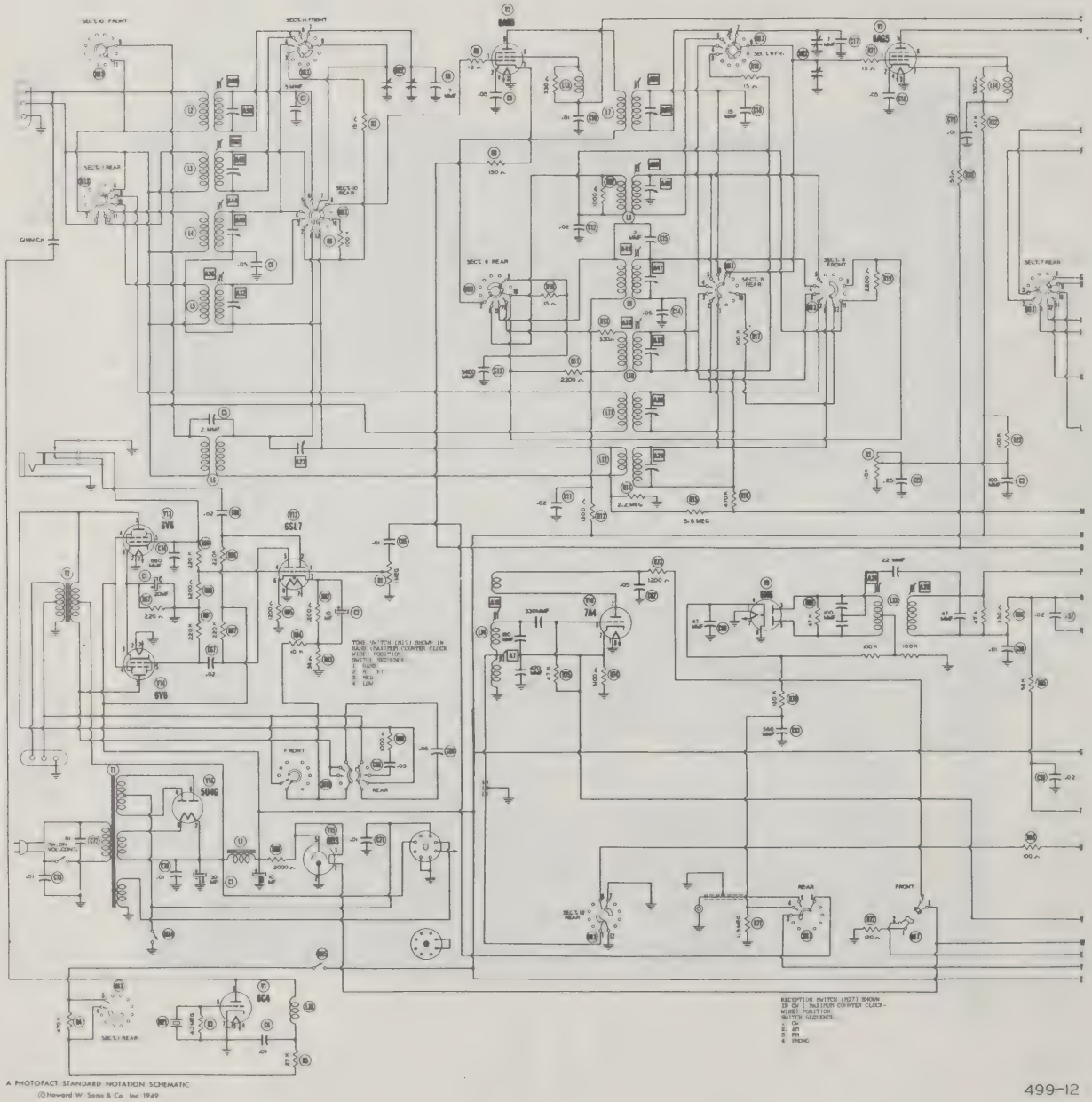
‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

* Measured from pin 2 of V16 (5U4G)

† Taken in Band 2 position.

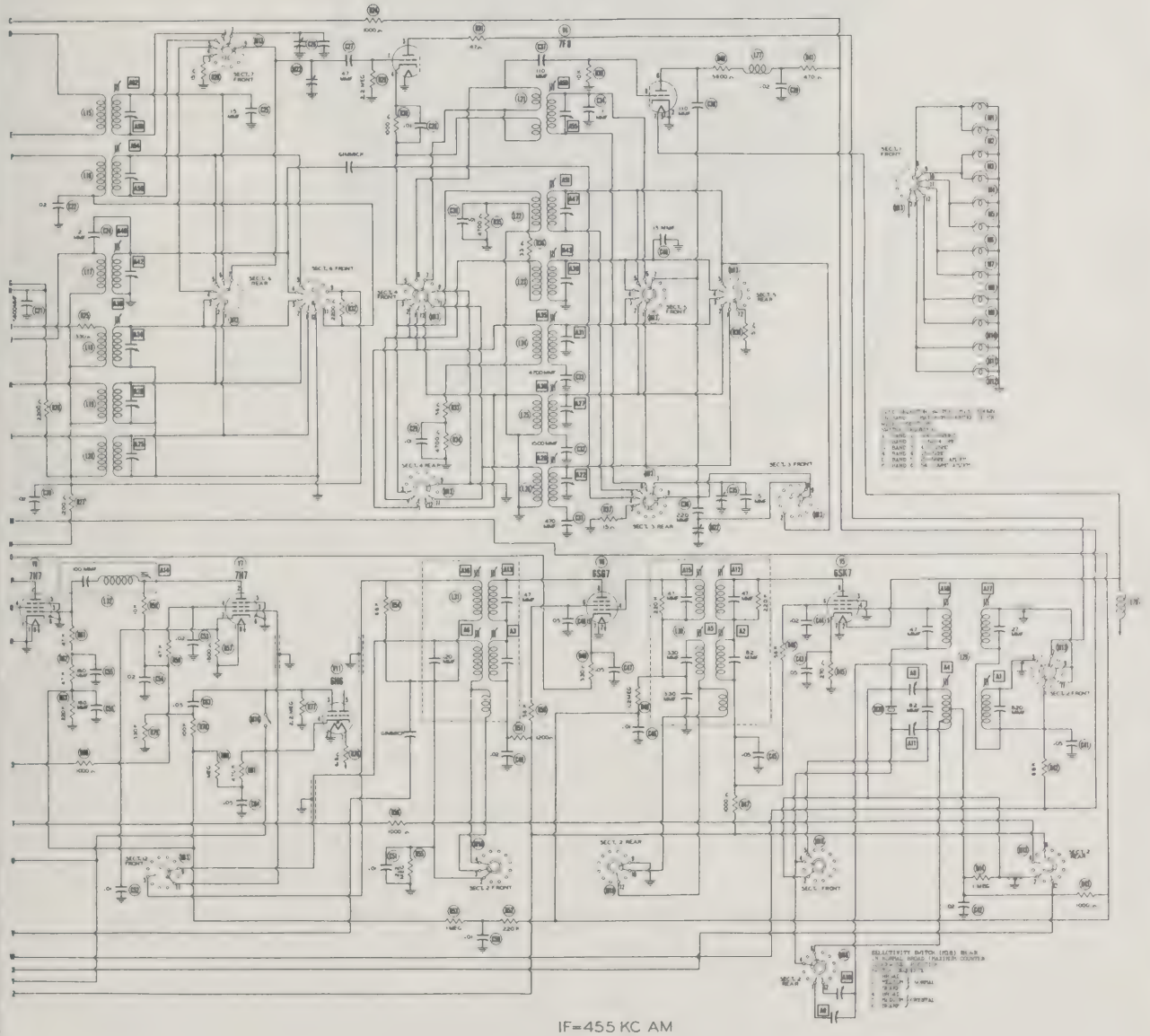
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A55
A47
C36
V4
R37
V3
R21
R20
V2
R24
R8
R9
C26
M22
C17
C8
C1
A3
V1
A13
L31
L34
A7
A21
V10
V9
M1
M3
M5
M7
M9
M11
V5
L29
A17
A1
L30
M4
M10
M12
M8
M6
M2
A2
A12
V12
V15
V13
V14
V6
T2
L1
V7
V16
V11
V8
A14
L32
T1
L33



A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co. Inc. 1949

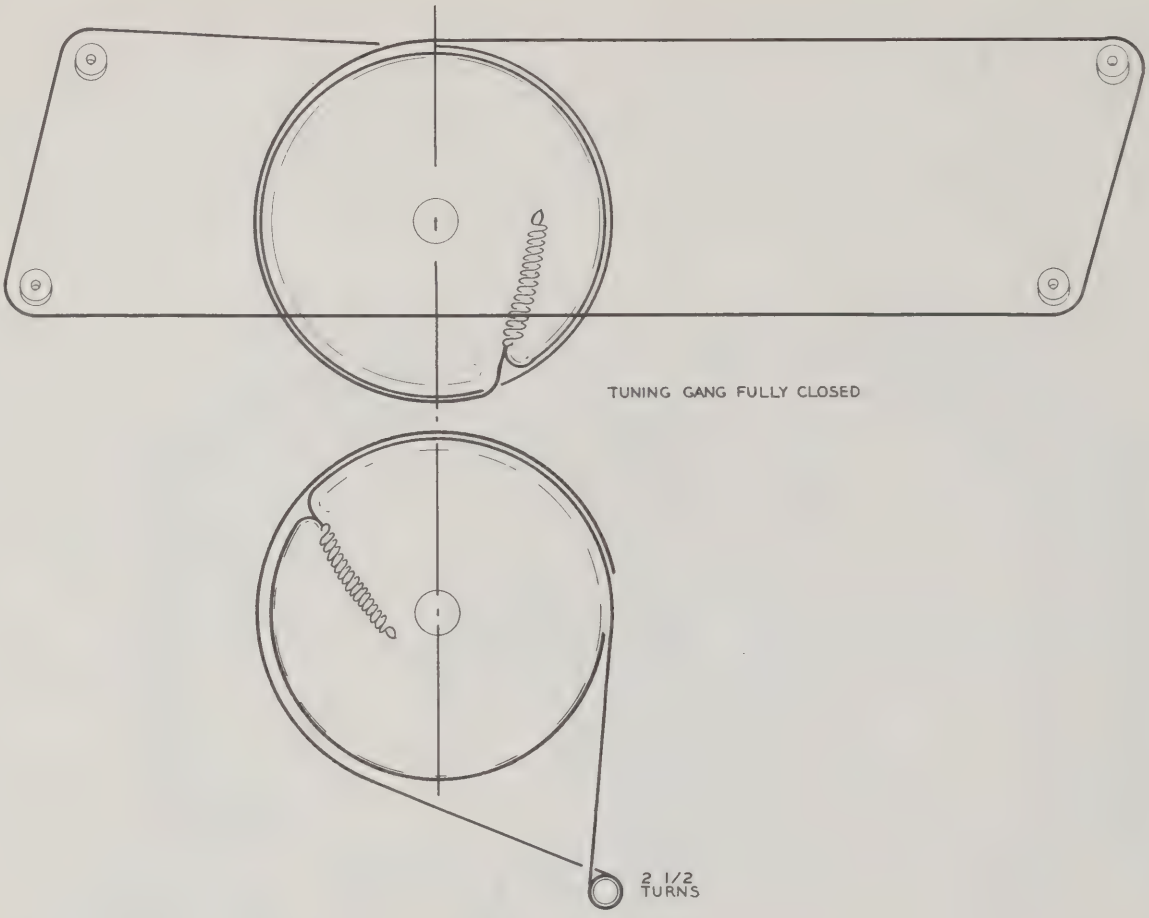


IF=455 KC AM

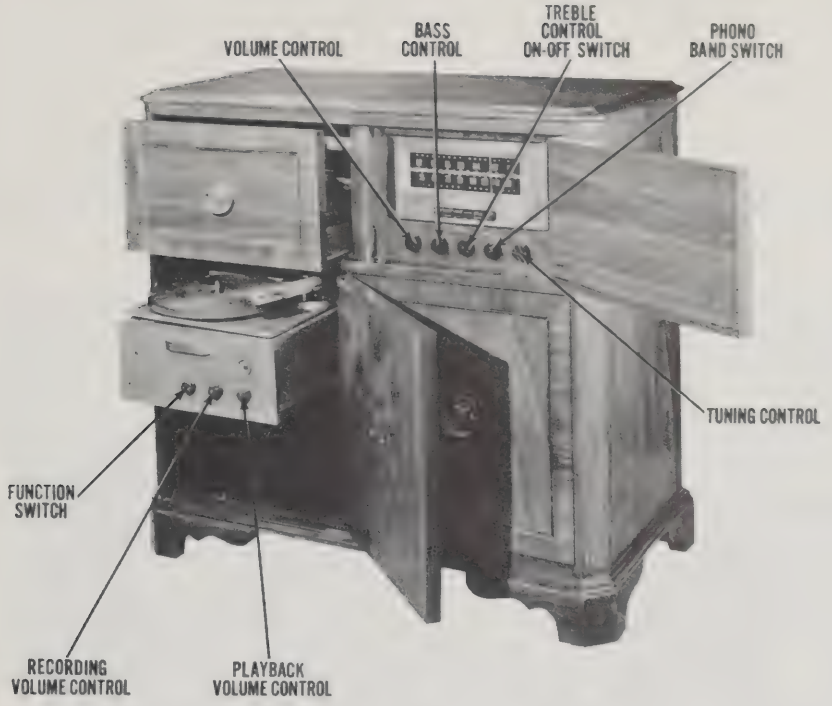
IF=10.7 MC FM

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co. Inc. 1949

499-12



DIAL CORD DRIVE



HOFFMAN MODEL C-518

TRADE NAME	Hoffman, Model C-518
MANUFACTURER	Hoffman Radio Corp., 3761 S. Hill St. Los Angeles, California
TYPE SET	AC Operated Combination Phono-Radio-Wire Recorder, AM-FM Superheterodyne Receiver with Loop Antenna.
TUBES(TWENTY-ONE)	Types 6BA6 RF Amp., 6C4 Osc., 6BE6 Mixer, 6BA6 1st IF Amp., 6AG5 or 6BA6 FM 2nd IF Amp., 6AL5 FM Ratio. DET., 6AT6 AM DET-AVC-Pillow Spkr. Amp., 6SJ7 AF Mixer 6J5GT Tone Control, 6J5 Phase Inv., (4) 6K6GT Power Output, 5U4G Rectifier, 12SJ7 Mic. Pre-Amp., 12SQ7 1st AF, 6AB5/6N5 Recording Level Ind., 12SQ7 2nd AF, 35L6GT Power Output, 50Y6GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING 1.85 Amp., @ 117 Volts AC
TUNING RANGE-BROADCAST	535-1650KC — FM 88-108MC

DISASSEMBLY INSTRUCTIONS

1. Remove recorder motor plug, phono motor plug, tuner power plug, speaker plug, and audio plug from rear of output chassis.
2. Remove record plug, phono pickup plug, FM antenna and loop antenna ground wire from rear of tuner chassis.
3. Remove loop antenna lead from loop.
4. Remove five push-on type control knobs.
5. Remove four metal screws from underneath tuner chassis. Remove chassis.
6. Remove four metal screws holding output chassis. Remove chassis.
7. Remove four metal screws holding speaker. Remove speaker.
8. Remove thumb screw from recorder drawer stop. Remove recorder drawer by pulling out front of cabinet.
9. Remove microphone jack from front of recorder drawer.
10. Remove recorder motor recorder cutter plug.
11. Pull recorder chassis out back of drawer.

PUSHBUTTON ADJUSTMENTS

The ranges of the five pushbuttons in order from left to right are as follows: 550-890KC, 550-890KC, 890KC-1570KC, 890-1570KC and 1000-1740KC.

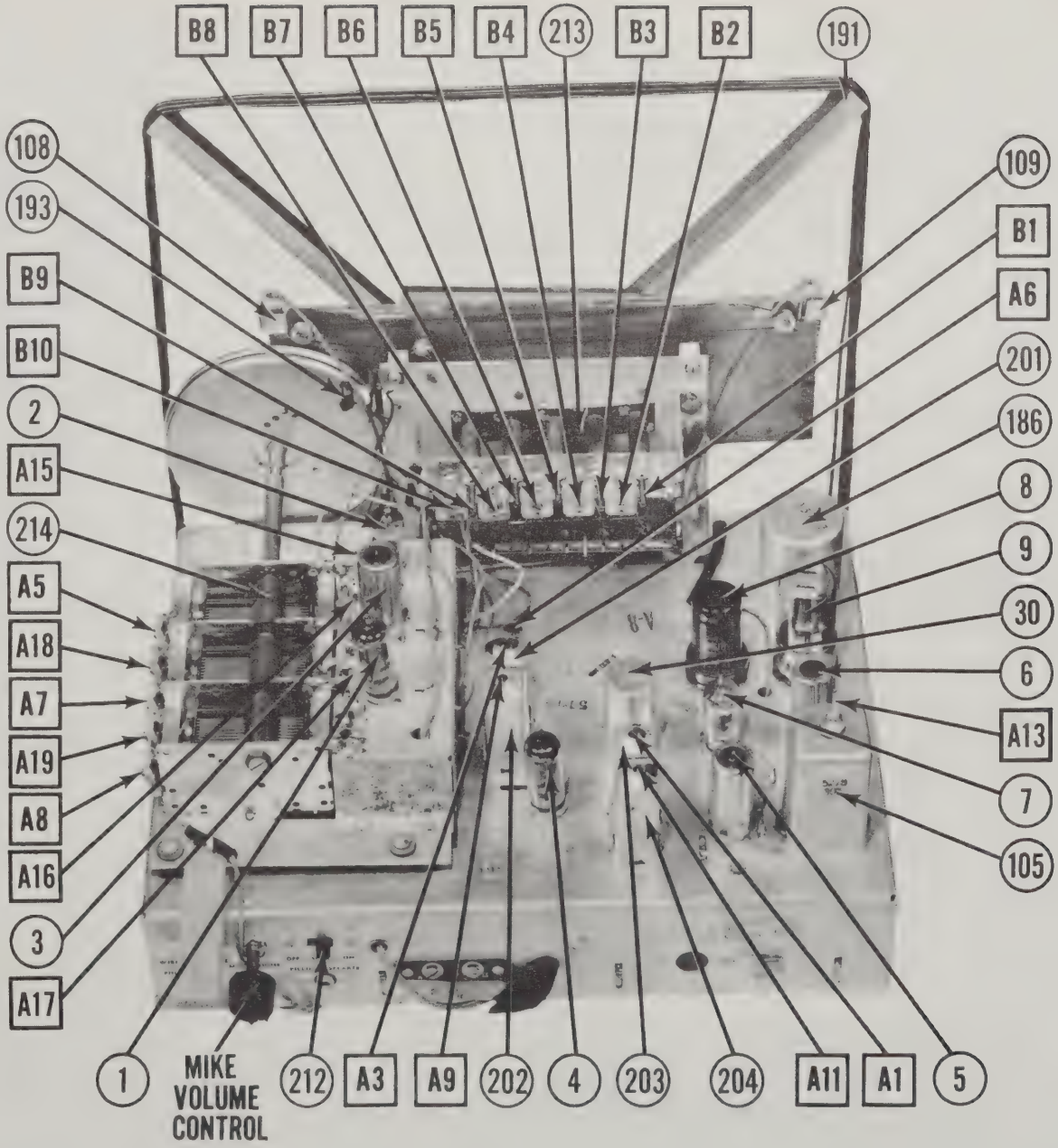
1. Turn set on and allow it to warm up for at least fifteen minutes.
2. Make up a list of stations desired to be set up, making sure that each station falls within the range of its button.
3. Depress "dial" button and manually tune in first station selected.
4. Depress first button and adjust B1 to tune in selected station.
5. Adjust B2 for maximum volume.
6. Follow the procedure outlined above to set up the remaining buttons.

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-13 SET #61 FOLDER 13

HOFFMAN
MODEL C-518


B8
B7
B6
B5
B4
213
B3
B2
191
108
193
B9
B10
2
A15
214
A5
A18
A7
A19
A8
A16
3
A17
109
B1
A6
201
186
8
9
30
6
A13
7
105
1
MIKE VOLUME CONTROL
212
A3
A9
202
4
203
204
A11
A1
5

A14
A2
A12
A10
A4
A
B
74
125
119
126
72
122
120
73
121
29
66
123
124
215
141
142
140
50
47
143
48
134
103
71
131
53
52
28
49
90
60
93
102
51
100
92
105
109
196
114
210
139
115
70
137
67
69
136
138
68
81
82
107
80
199
83
200
103
79
106
78
197
198
104
61
86
62
84
98
63
135
97
128
91
129
55
194
54
87
99
195
77
85
101
206
64
59
110
58
111
118
57
117
112
108
113
127
132
133
56
75
116
76

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HOFFMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
1	RF Amp		6BA6	7BK	
2	Osc.		6C4	6BG	
3	Mixer		6BE6	7CH	
4	1st IF Amp.		6BA6	7BK	
5A	FM 2nd IF Amp.		6AG5	7BD	
5B	FM 2nd IF Amp.		6BA6	7BK	
6	FM Ratio Det.		6AL5	6BT	
7	AM DET-AVC-Pillow Spkr.		6AT6	7BT	
8	AF Mixer		6SJ7	8N	
9	Tone Control		6J5GT	6Q	
10	Phase Inverter		6J5	6Q	
11	Power Output		6K6GT	7S	
12	Power Output		6K6GT	7S	
13	Power Output		6K6GT	7S	
14	Power Output		6K6GT	7S	
15	Rectifier		5U4G	5T	
16	Mic. Pre-Amp.		12SJ7	8N	
17	1st Audio		12SQ7	8Q	
18	Recording Level Ind.	6AB5/6N5	6AB5/6N5	6R	
19	2nd Audio		12SQ7	8Q	
20	Power Output		35L6GT	7AC	
21	Rectifier		50Y6GT	7Q	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HOFFMAN PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
22A	20	450	4200	AF44J4A	UP2245C		DY-312	EL-350	■ Filter
B	20	450							▲ "
C	20	25							Cath. Bypass
23A	40	300		AF8J	UP4045		DY-40-450	D5860†	■ Filter
B	50	150		PRS150/50	BR5015		M-50-150		▲ Voltage Doubler
24A	20	450		AF44J4A	UP2245C		DY-312	EL-350	■ Decoupling
B	20	450							▲ "
C	20	25							Cath. Bypass
25	50	150		PRS150/50	BR5015		M-50-150	UT-501	Voltage Doubler
26	100	25		PRS25/100	BRH-251		M-100-25	UHC-102	Cathode Bypass
27	10	450	4203	PRS450/10	BR1045		M-10-450	UT-12	AF Plate Decoupling
28	200	25	4205	PRS25/100*	BRH2525		M-250-25	UHC-202	Cathode Bypass
29	5	50	4209	PRS150/4	BR550		M-4-45	TA-55	Stabilizing Cap.
30	20	450	4207	AF4J	UP2045		DY-20-450	EL-2	Filter
31	.01	600	4105	684-01	GT6S1		ST-6-01	TC-11	Line Filter
32	.01	600	4105	684-01	GT6S1		ST-6-01	TC-11	" "
33	.001	600	4104	684-001	GT6D1		ST-6-001	TC-21	Output Plate Bypass
34	.001	600	4104	684-001	GT6D1		ST-6-001	TC-21	" " "
35	.05	400	4101	484-05	GT4S5		ST-4-05	TC-15	AF Coupling
36	.05	400	4101	484-05	GT4S5		ST-4-05	TC-15	" "
37	.01	400	4112	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	" "
38	.02	400	4100	484-02	GT4S2		ST-4-02	TC-12	" "
39	.001	600	4104	684-001	GT6D1	GP2L-001	ST-6-001	TC-21	" "
40	.001	600	4104	684-001	GT6D1	GP2L-001	ST-6-001	TC-21	" "
41	.005	600	4102	684-005	GT6D5	GP2M-005	ST-6-005	TC-25	" "
42	.02	400	4100	484-02	GT4S2		ST-4-02	TC-12	" "
43	.1	200		484-1	GT2P1		ST-2-1	TC-1	" "
44	02	600		684-02	GT6S2		ST-6-02	TC-12	Recorder Indicator Filter
45	.05	400	4101	484-05	GT4S5		ST-4-05	TC-15	Fil. Bypass
46	.05	200	4101	484-05	GT2S5		ST-4-05	TC-15	AF Screen Bypass
47	.01	600	4106	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	AF Coupling
48	.01	600	4112	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	" "
49	.5	200	4110	484-5	GT2P5		ST-2-5	TC-5	Tone Comp.
50	.005	600	4102	684-005	GT6D5	GP2M-005	ST-6-005	TC-25	" "
51	.01	600	4112	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	" "
52	.05	400	4101	484-05	GT4S5		ST-4-05	TC-15	AF Screen Bypass
53	.02	400	4100	484-02	GT4S2		ST-4-02	TC-12	AF Coupling
54	.05	400	4101	484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
55	.005	600	4102	684-005	GT6D5	GP2M-005	ST-6-005	TC-25	" "

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HOFFMAN PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES	
107	22KΩ	½	4501	BTS-22K	Red-Red-Or.	Osc. Grid
108	4700Ω	2	4551	BT-2-4700	Yl.-Vi.-Red	Osc. Plate
109	2.2 Meg.	½	4502	BTS-2.2 Meg.	Red-Red-Grn.	AVC Net.
110	56Ω	½	4545		Grn.-Blue-Blk.	1st IF Cathode
111	33KΩ	1	4556	BTA-33K	Or.-Or.-Or.	1st IF Screen
112	1500Ω	½	4534	BTS-1500	Br.-Grn.-Red	1st IF Decoup.
113	100KΩ	½	4511	BTS-100K	Br.-Blk.-Yl.	Diode Filter
114	100KΩ	½	4511	BTS-100K	Br.-Blk.-Yl.	Diode Load
115	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	" "
116	56Ω	½	4545		Grn.-Blue-Blk.	2nd IF Cathode
117	33KΩ	1	4556	BTA-33K	Or.-Or.-Or.	2nd IF Screen
118	1500Ω	½	4534	BTS-1500	Br.-Grn.-Red	2nd IF Decoup.
119	100Ω	½	4546		Br.-Blk.-Br.	RF Filter
120	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	De-emphasis
121	400Ω	½	4549		Yl.-Blk.-Br.	Balancing Res.
122	400Ω	½	4549		Yl.-Blk.-Br.	" "
123	6800Ω	½	4557	BTS-6800	Blue-Gray-Red	Ratio Det. Diode Load
124	6800Ω	½	4557	BTS-6800	Blue-Gray-Red	" " " "
125	470KΩ	½	4506	BTS-470K	Yl.-Vi.-Yl.	AVC Net.
126	10 Meg.	½	4505	BTS-10 Meg.	Br.-Blk.-Blue	Pillow Sprk. Amp. Grid
127	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	Pillow Sprk. Amp. Plate Load
128	100KΩ	½	4511	BTS-100K	Br.-Blk.-Yl.	Tone Compensation
129	470KΩ	½	4506	BTS-470K	Yl.-Vi.-Yl.	" "
130	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	Isolation See Note
131	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	"
132	1 Meg.	½	4513	BTS-1 Meg.	Br.-Blk.-Grn.	AF Mixer Screen
133	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	AF Mixer Plate Load
134	2200Ω	½	4512	BTS-2200	Red-Red-Red	AF Mixer Cathode
135	470KΩ	½	4506	BTS-470K	Yl.-Vi.-Yl.	Tone Comp.
136	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	" "
137	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	Tone Comp.
138	22KΩ	½	4501	BTS-22K	Red-Red-Or.	" "
139	4.7 Meg.	½	4544	BTS-4.7Meg.	Yl.-Vi.-Grn.	" "
140	1 Meg.	½	4513	BTS-1 Meg.	Br.-Blk.-Grn.	Tone Amp. Grid
141	2200Ω	½	4512	BTS-2200	Red-Red-Red	Tone Amp. Cathode
142	22KΩ	½	4501	BTS-22K	Red-Red-Or.	" " "
143	22KΩ	½	4501	BTS-22K	Red-Red-Or.	Tone Amp. Plate Load
144	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	Isolation
145	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	"
146	1 Meg.	½	4513	BTS-1 Meg.	Br.-Blk.-Grn.	Phase Inv. Grid
147	2200Ω	½	4512	BTS-2200	Red-Red-Red	Phase Inv. Cathode
148	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	" " "
149	47KΩ	½	4504	BTS-47K	Yl.-Vi.-Or.	Phase Inv. Plate Load
150	10KΩ	½	4515	BTS-10K	Br.-Blk.-Or.	Phase Inv. Plate Decoup.
151	220KΩ	2	4500	BTS-220K	Red-Red-Yl.	Output Grid
152	220KΩ	2	4500	BTS-220K	Red-Red-Yl.	"
153	220Ω	3	4706	AB-200	Red-Red-Br.	Output Cathode
154	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	Tone Comp.
155	1 Meg.	½	4513	BTS-1 Meg.	Br.-Blk.-Grn.	" "
156	10KΩ	2	4503	BT-2-10K	Br.-Blk.-Or.	Bleeder
157	10KΩ	2	4503	BT-2-10K	Br.-Blk.-Or.	"
158	10KΩ	2	4503	BT-2-10K	Br.-Blk.-Or.	"
159	220KΩ	½	4500	BTS-220K	Red-Red-Yl.	Mic. Pre. Amp. Grid
160	220Ω	½		BW-½-220	Red-Red-Br.	Mic. Pre. Amp. Cathode
161	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	Mic. Pre. Amp. Screen
162	220KΩ	½		BTS-220K	Red-Red-Yl.	Mic. Pre. Amp. Plate Load
163	220KΩ	½		BTS-220K	Red-Red-Yl.	Isolation
164	220KΩ	½		BTS-220K	Red-Red-Yl.	"
165	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vi.-Grn.	1st AF Grid
166	220KΩ	½		BTS-220K	Red-Red-Yl.	1st AF Plate
167	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	2nd AF Grid
168	220KΩ	½		BTS-220K	Red-Red-Yl.	2nd AF Plate
169	10KΩ	½		BTS-10K	Br.-Blk.-Or.	2nd AF Cathode
170	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	Output Grid
171	220Ω	1		BW-1-220	Red-Red-Br.	Output Cathode
172	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Decoupling
173	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	"
174	470Ω	1		BTA-470	Yl.-Vi.-Br.	Filter
175	220KΩ	½		BTS-220K	Red-Red-Yl.	2nd AF Grid
176	470KΩ	½		BTS-470K	Yl.-Vi.-Yl.	Audio Shunt
177	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn.	Tone Comp.
178	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	Level Ind. Plate Load
179	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	Level Ind. Net.
180	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn.	" " "
181	10KΩ	½		BTS-10K	Br.-Blk.-Or.	Feedback
215	22KΩ	½		BTS-22K	Red-Red-Or.	Tone Amp. Cathode

Note. Not used in all models.

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HOFFMAN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
56	.001	600	4104	464-001	CM-1	GP2L-001	ST-6-001	TC-21	RF Screen Bypass
57	.01	600	4112	464-01	GT6S1	GP2-335-01	ST-6-01	TC-11	RF Bypass Power Supply
58	.01	600	4112	464-01	CM-1	GP2-335-01	ST-6-01	TC-11	1st IF Plate Decoup.
59	.001	600	4104	464-001	GT6D1	GP2L-001	ST-6-001	TC-21	1st IF Screen Bypass
60	.05	200	4109	464-05	GT2S5		ST-4-05	TC-15	AVC Filter
61	.01	400	4111	464-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Decoupling
62	.05	200	4109	464-05	GT2S5		ST-4-05	TC-15	AVC Filter
63	.05	200	4109	464-05	GT2S5		ST-4-05	TC-15	" "
64	.05	200	4109	464-05	GT2S5		ST-4-05	TC-15	Fil. Bypass
65	.[illegible]	[illegible]	[illegible]	[illegible]	GT6D5	GP2M-005	ST-6-005	TC-25	Recorder Coupling
66	.0 2	600	4118	464-02	CM-2	GP2M-002	ST-6-002	TC-20	De-emphasis
67	.22	600	4012	1468-0002	5W5T3	GP2K-300	MO.5-33	1FM-335	Tone Comp.
68	.33	500	4010	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	" "
69	.[illegible]	500	4011	1468-00075	1W5T7	GP2K-750	MO.5-37	1FM-37	" "
70	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	" "
71	[illegible]	600	4010	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	" "
72	.[illegible]	500	4010	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	Det. Diode Load Cap, Note
73	.33	500	4010	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	" " " "
74	.33	500	4010	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	RF Bypass
75	.[illegible]	500	4013	1468-0007	1W5D25	GP2M-0025	MW.5-225	1FM-22	2nd IF Decoupling
76	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode RF Filter
77	[illegible]	300	4012	1468-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Mixer Decoupling
78	[illegible]	500	4010	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Mixer Screen Bypass
79	250	300	4021	1468-0002	5W5T2	GP2K-250	MO.5-32	1FM-32	Cathode Bypass
80	25	300	4021	1468-000025	5W5T25	GP1K-25	MO.5-425	MS-425	Osc. Grid Cap.
81	50	300	4021	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Cathode Bypass
82	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Feedback
83	5	300	4014	1469-00005	5R5Q5		MOS.5-45	MS-45	Fixed Trimmer ± 2%
84	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
85	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
86	[illegible]	500	4010	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Screen Bypass
87	100	300	4012	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
88	100	300		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Recorder Indicator Filter
89	100	30		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Tone Comp.

† Parallel two sections.
* Use two in parallel.
Note. If either item 72 or 73 is replaced with a different value the other must be replaced with a capacitor of equal value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
90A	500KΩ	2	4004	D13-133	M-60-Z	Volume control
B	Shaft		Not Req.	A	Not Req.	Attach to 90A Per Instructions
91A	500KΩ	½	4003	D13-133	M-60-Z	Mike volume control
B	Shaft		Not Req.	A	Not Req.	Attach to 91A Per Instructions
92A	250KΩ	½	4005	D13-130	M-64-Z	Treble control
B	Shaft		Not Req.	A	Not Req.	Attach to 92A Per Instructions
C	Switch		Not Req.	41	SW-A	" " " " "
93	500KΩ	2	4006			Bass control
94A	500KΩ	½	4003	D13-133	M-60-Z	Record-Radio-Phono control
B	Shaft		Not Req.	A	Not Req.	Attach to 94A Per Instructions
C	Switch			41	SW-A	" " " " "
95A	500KΩ	½	4004	D13-133	M-60-Z	Record-playback control.
B	Shaft		Not Req.	A	Not Req.	Attach to 95A Per Instructions
96A	500KΩ		4011	D13-133	M-60-Z	Volume indicator control
B	Shaft		Not Req.	A	Not Req.	Attach to 96A Per Instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HOFFMAN PART No.	IRC PART No.	IDENTIFICATION CODES	
97	47KΩ	2	4048	BTS-47K	Red-Vi.-Yl.	RF Grid
98	56Ω	½	4561		Grn.-Blue-Blk.	RF Cathode
99	33KΩ	1	4556	BTA-33K	Or.-Or.-Or.	RF Screen
100	1500Ω	½	4534	BTS-1500	Br.-Grn.-Red	RF Decoupling
101	100KΩ	½	4511	BTS-100K	Br.-Blk.-Yl.	AVC Net.
102	100KΩ	½	4511	BTS-100K	Br.-Blk.-Yl.	" "
103	22Ω	½	4560		Red-Red-Blk.	Parasitic Supp.
104	33KΩ	1	4556	BTA-33K	Or.-Or.-Or.	Mixer Screen
105	1500Ω	½	4534	BTS-1500	Br.-Grn.-Red	Mixer Decoupling
106	56Ω	½	4545		Grn.-Blue-Blk.	Mixer Cathode

DATE 5/49 499-13 SET #61 FOLDER 13

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
182	117VAC @ 1.84A	82VCT @ .2ADC	6.2VAC @ 3.0A	6.6VAC @ 4.7A	5007			P-3156#
183	117VAC @ .18A	120VAC @ .045 ADC	5.7VAC @ .15A		5013-1			P-3045

Drill new mounting holes.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
184	117VAC @ .19A	115VAC @ .15A			5013-1			

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
185	.18A	96Ω	5.5HY	5116			C-3196	# Drill new mounting holes.

TONE CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∿)	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
186		12Ω	3.3Y	5103				

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA HOFFMAN PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
187	7000Ω CT	2.7Ω	530Ω CT	.4Ω	5108	A-3870	RO-305	A-2904‡	‡ Drill one new mounting hole.
188	10KΩ CT	3.6Ω	820Ω CT	.4Ω	5111	A-3823	RO-303	A-2936	

SPEAKER

ITEM No.	RATINGS FIELD	RATINGS V. C. IMP.	REPLACEMENT DATA HOFFMAN PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
189	4.5W	2.7Ω	5044		12550	
190	2.5W [illegible]	V. C. Imp. 1.4Ω				

HOFFMAN
MODEL C-518
PAGE 5

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

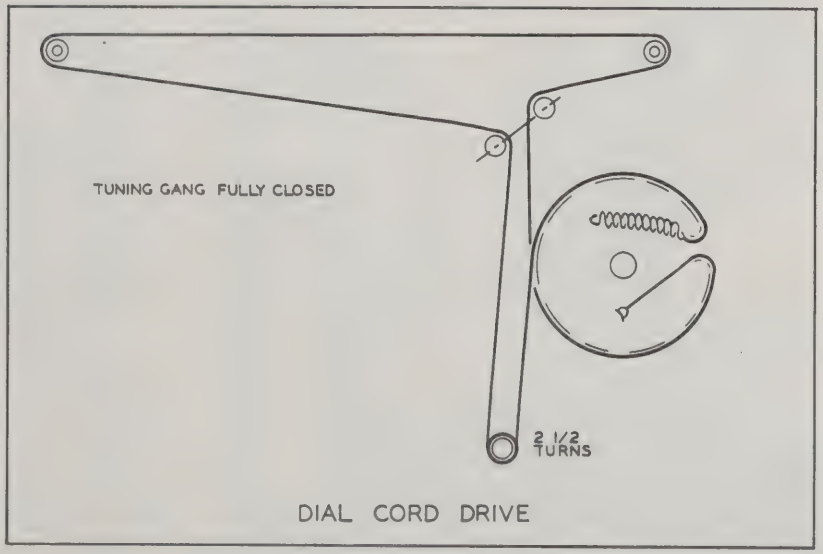
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	HOFFMAN PART No.	MEISSNER PART No.
191	AM Loop Ant.	0Ω	.2Ω	55210	
192	FM Dipole Ant.				
193	AM Ant.		4.4Ω	5265	
194	FM Ant.		0Ω	5253	
195	RF Plate		0Ω	5254	
196	RF Plate		0Ω	5254	
197	FM RF Coil		0Ω	5252	
198	AM RF Coil	1Ω	7.9Ω	5264	
199	AM Osc.		5.7Ω	5263	
200	FM Osc.		0Ω	5251	
201	AM 1st IF	12Ω	12Ω	5276	
202	FM 1st IF	1Ω	.4Ω	5274	
203	AM 2nd IF	12Ω	12Ω	5277	
204	FM 2nd IF	1.2Ω	.4Ω	5275	
205	FM Ratio Det.	1.9Ω	.1Ω	5278	
206	Fil. Choke		0Ω	5266	

DIAL LIGHTS

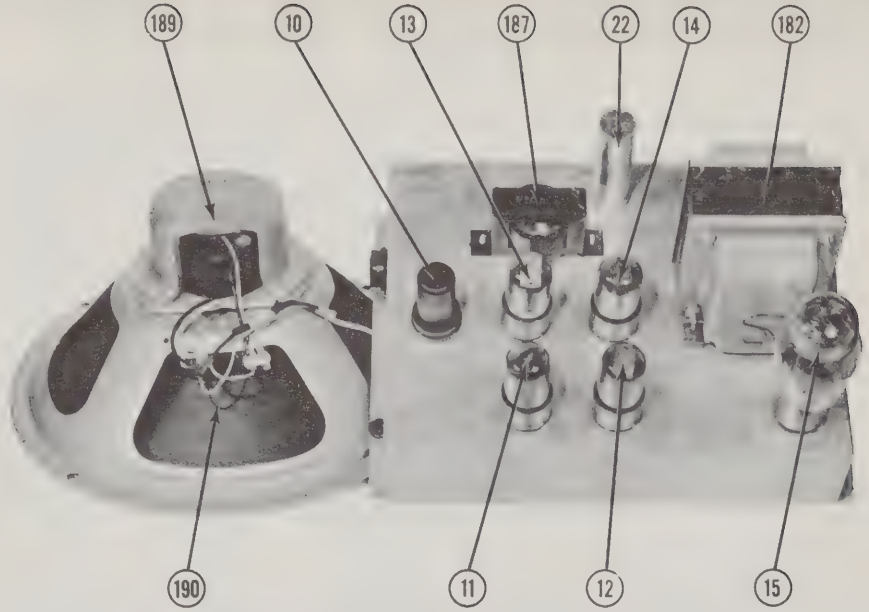
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA HOFFMAN PART No.		NOTES
207	Bayonet	6-8V	0.25A	Blue			Type #44
208	Bayonet	6-8V	0.25A	Blue			Type #44
209	Bayonet	6-8V	0.15A	Brown			Type #47

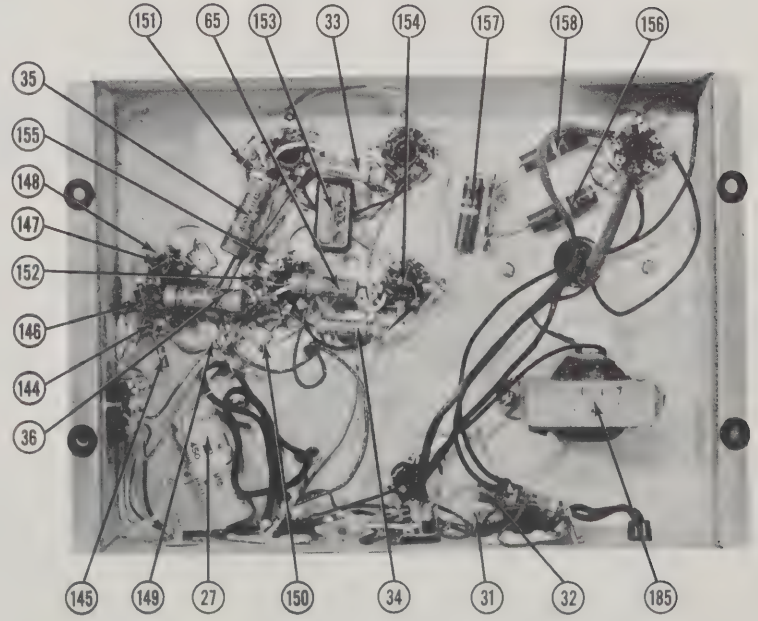
MISCELLANEOUS

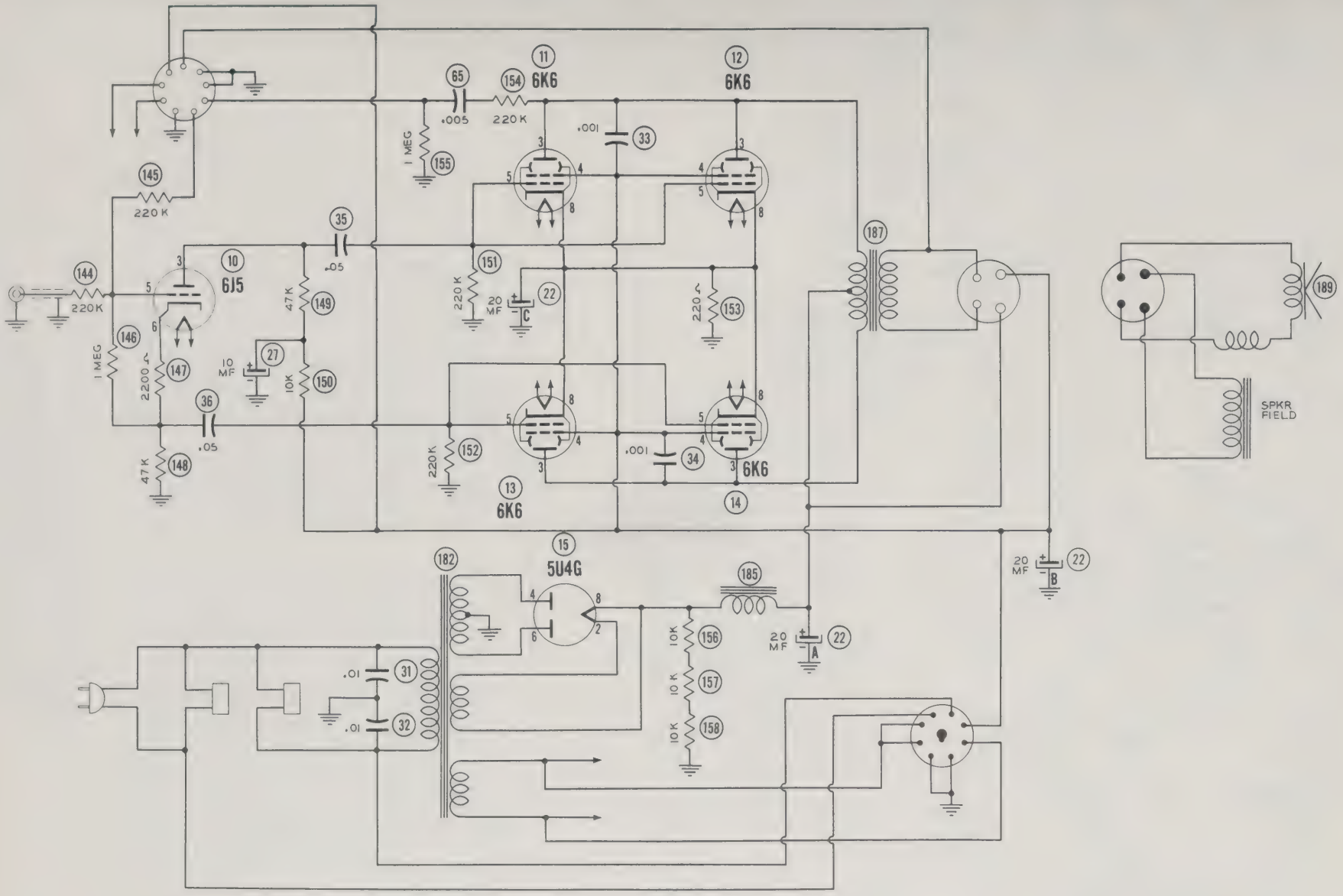
ITEM No.	PART NAME	HOFFMAN PART No.	NOTES
210	Switch	6014	Band (RF)
211	Switch	6015	Band (Audio)
212	Switch	6007	Speaker
213	Switch	6004	Pushbutton Assby.
214	3 Gang Var. Cap.	4408	(20-480MMF, 20-480MMF, 20-345MMF)



DIAL CORD DRIVE



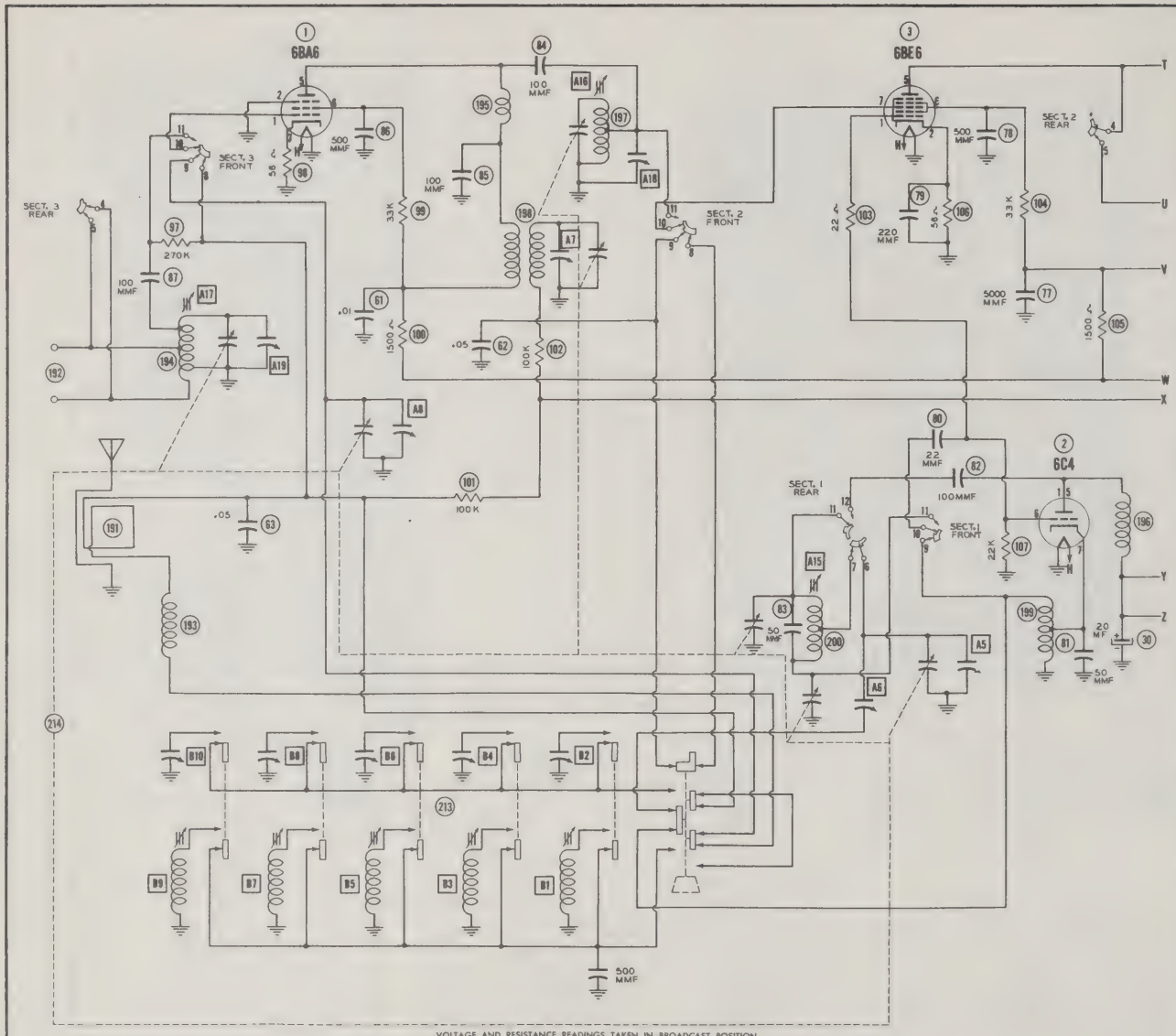




A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949

499-13



VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.
RADIO-PHONO SWITCH IN RADIO POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	0V	0V	6.6VAC	0V	250VDC	105VDC	0VDC	
2A	6C4	215VDC	0V	6.6VAC	0V	215VDC	1-9.4VDC	0V	
‡ 2B	6C4	170VDC	0V	6.6VAC	0V	170VDC	1-4.8VDC	0V	
3	6BE6	1VDC	4VDC	6.6VAC	0V	65VDC	70VDC	0V	
4	6BA6	-.1VDC	0V	6.6VAC	0V	260VDC	95VDC	.8VDC	
‡ 5	6AL5	0V	0V	6.6VAC	0V	250VDC	130VDC	0V	
‡ 6	6AL5	.2VDC	-.3VDC	6.6VAC	0V	0V	0V	.8VDC	
7	6AT6	-.1VDC	0V	6.6VAC	0V	-.4VDC	-.4VDC	170VDC	
8	6BJ7	0V	0V	0V	0V	2VDC	4.2VDC	6.6VAC	6.6VDC
9	6J5GT	0V	6.6VAC	175VDC	6.6VDC	185VDC	50VDC	0V	250VDC
10	6J5	0V	6.6VAC	245VDC	6.6VDC	265VDC	70VDC	0V	85VDC
11	6AB5T	0V	6.6VAC	320VDC	295VDC	0V	0V	0V	24VDC
12	6J5GT	0V	6.6VAC	320VDC	295VDC	0V	0V	0V	24VDC
13	6AB5T	0V	6.6VAC	320VDC	295VDC	0V	0V	0V	24VDC
14	6AB5T	0V	6.6VAC	320VDC	295VDC	0V	0V	0V	24VDC
15	6BA6	0V	6.6VAC	250VDC	0V	260VAC	0V	460VAC	0V	360VDC
16	6AL5	0V	0V	1VDC	0V	1VDC	0V	30VDC	12VAC	80VDC
17	12SK7	0V	-.1VDC	0V	0V	-.2VDC	95VDC	12VAC	24VAC
18	6AL5	0V	0V	1.4VAC	0V	0V	145VDC	24VAC	36VAC
19	6SL7GT	0V	75VAC	285VDC	120VDC	0V	0V	12VAC	0VDC
20	6SN7GT	0V	115VAC	0V	43VDC	105VDC	0V	0V	0VDC
21	6SN7GT	0V	115VAC	0V	43VDC	105VDC	0V	0V	0VDC

‡TAKEN WITH VACUUM TUBE VOLTMETER
Tubes 16-21 incl. taken in record position.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	2.5 Meg.	0Ω	.1MΩ	0Ω	.52KΩ	95KΩ	50Ω	
2A	6C4	35KΩ	.5Ω	.1MΩ	0Ω	35KΩ	22KΩ	.5Ω	
‡ 2B	6C4	35KΩ	.5Ω	.1MΩ	0Ω	35KΩ	22KΩ	1.5Ω	
3	6BE6	22KΩ	5Ω	.1MΩ	0Ω	60KΩ	95KΩ	2.5 Meg.	
4	6BA6	2.5 Meg.	0Ω	.1MΩ	0Ω	52KΩ	95KΩ	50Ω	
‡ 5	6AL5	4MΩ	0Ω	.1MΩ	0Ω	32KΩ	95KΩ	50Ω	
‡ 6	6AL5	7KΩ	7KΩ	.1MΩ	0Ω	Inf.	0Ω	Inf.	
7	6AT6	1V Meg.	0Ω	.1Ω	0Ω	480KΩ	270KΩ	60KΩ	
8	6BJ7	0Ω	0Ω	0Ω	18.0KΩ	2.6KΩ	1 Meg.	.1Ω	70KΩ
9	6J5GT	0Ω	.1Ω	6.0KΩ	35KΩ	1 Meg.	95KΩ	0Ω	85KΩ
10	GJ5	0Ω	.1Ω	5.0KΩ	1.5 Meg.	1 Meg.	47KΩ	0Ω	60KΩ
11	6AB5T	0Ω	.1Ω	6.0KΩ	3.0KΩ	320KΩ	Inf.	0Ω	220Ω
12	6J5GT	0Ω	.1Ω	5.0KΩ	5.0KΩ	15.0KΩ	Inf.	0Ω	220Ω
13	6AB5T	0Ω	.1Ω	6.0KΩ	3.0KΩ	320KΩ	Inf.	0Ω	220Ω
14	6AB5T	0Ω	.1Ω	5.0KΩ	5.0KΩ	15.0KΩ	1 Meg.	0Ω	220Ω
15	6BA6	Inf.	3MΩ	Inf.	18MΩ	Inf.	110MΩ	Inf.	0MΩ
16	6AL5	0Ω	0Ω	220Ω	220KΩ	220Ω	1.2 Meg.	19Ω	44KΩ
17	12SK7	0Ω	4.7 Meg.	0Ω	0Ω	2.7 Meg.	440KΩ	19Ω	0Ω
18	6AL5	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω	0Ω
19	6SL7GT	0Ω	1.0MΩ	5KΩ	0Ω	0Ω	44KΩ	30Ω	4Ω
20	6SN7GT	0Ω	54Ω	170KΩ	82KΩ	470KΩ	Inf.	42Ω	220Ω
21	6SN7GT	0Ω	56Ω	0Ω	140KΩ	140KΩ	Inf.	54Ω	1.0MΩ

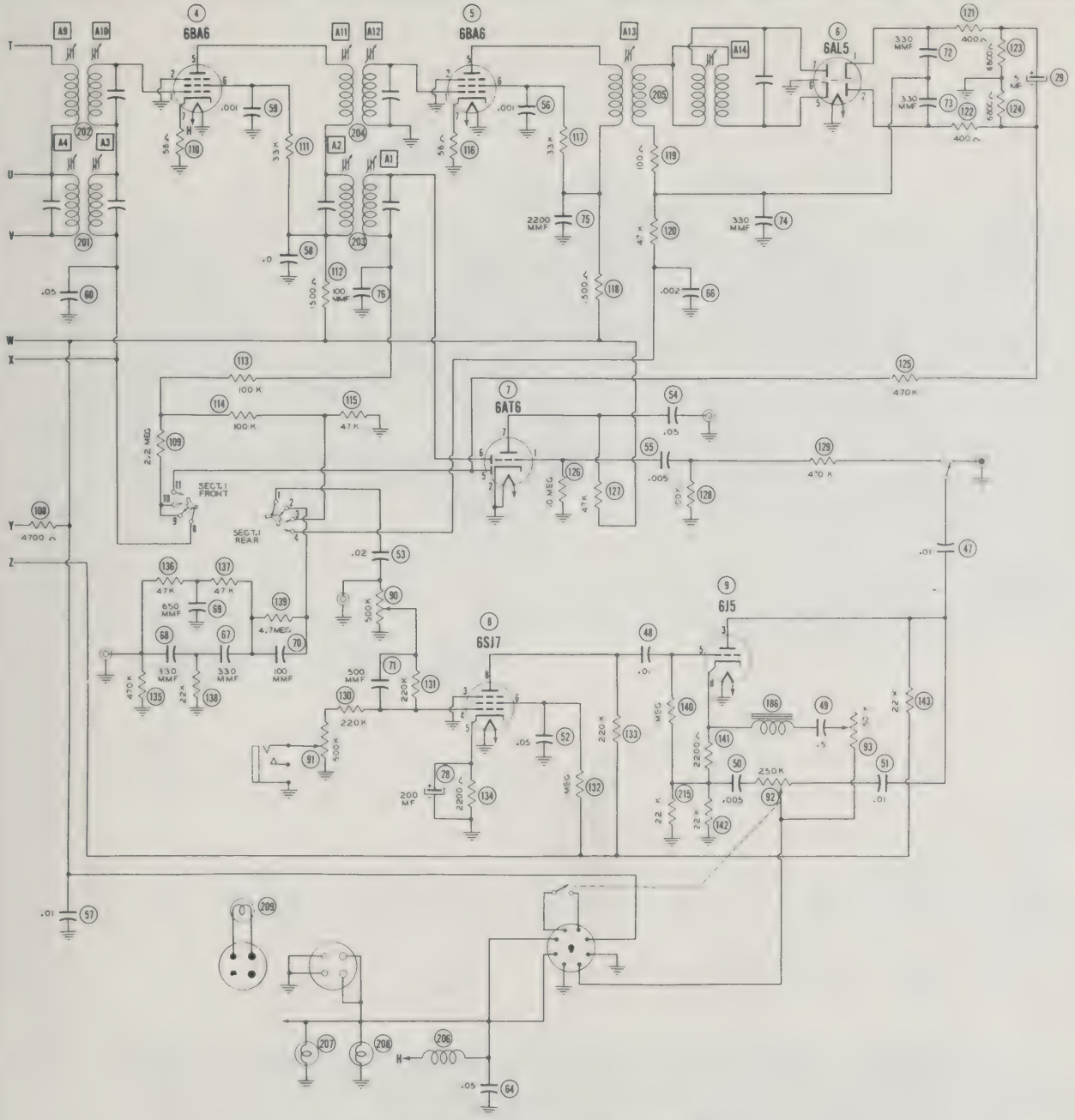
‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

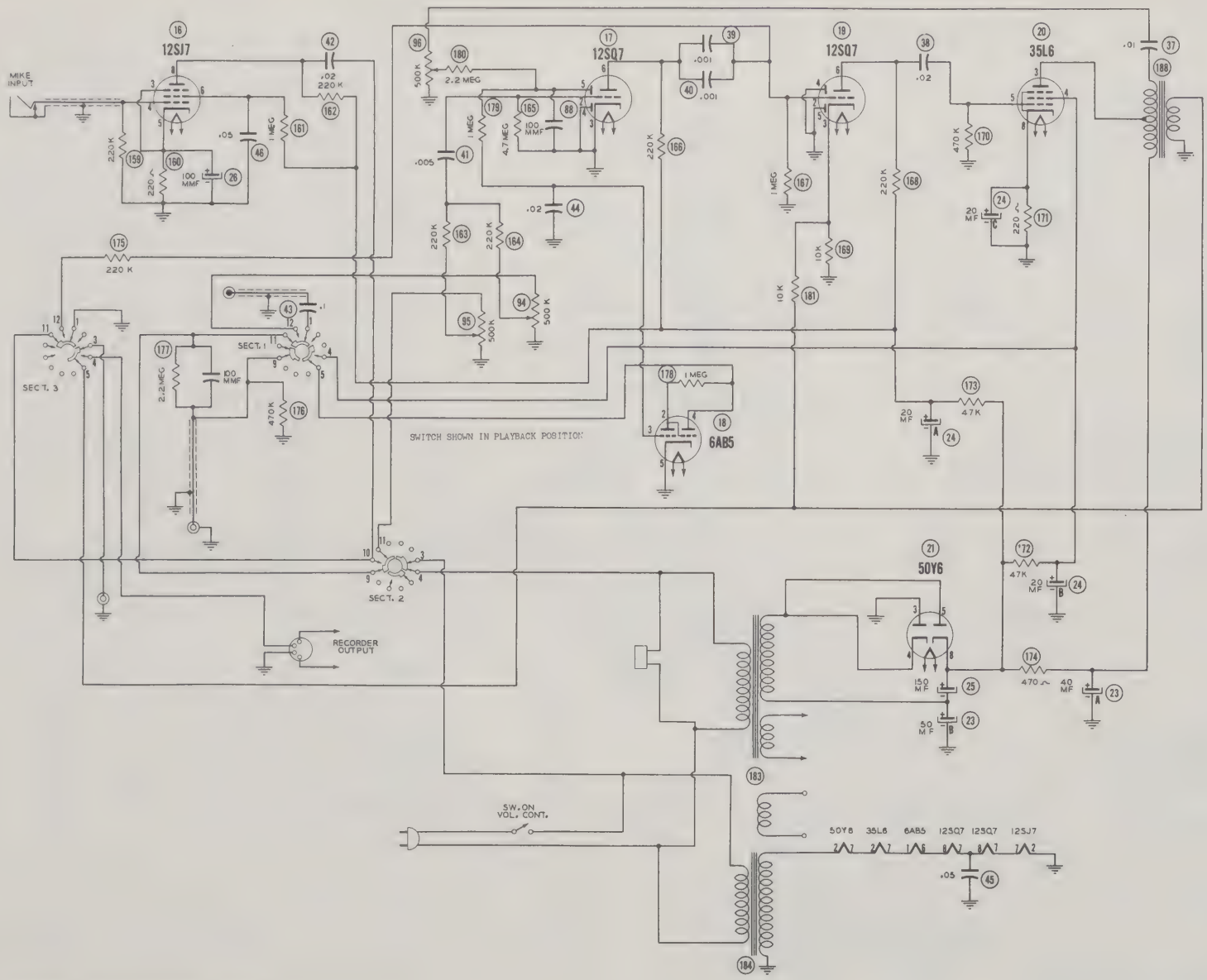
RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

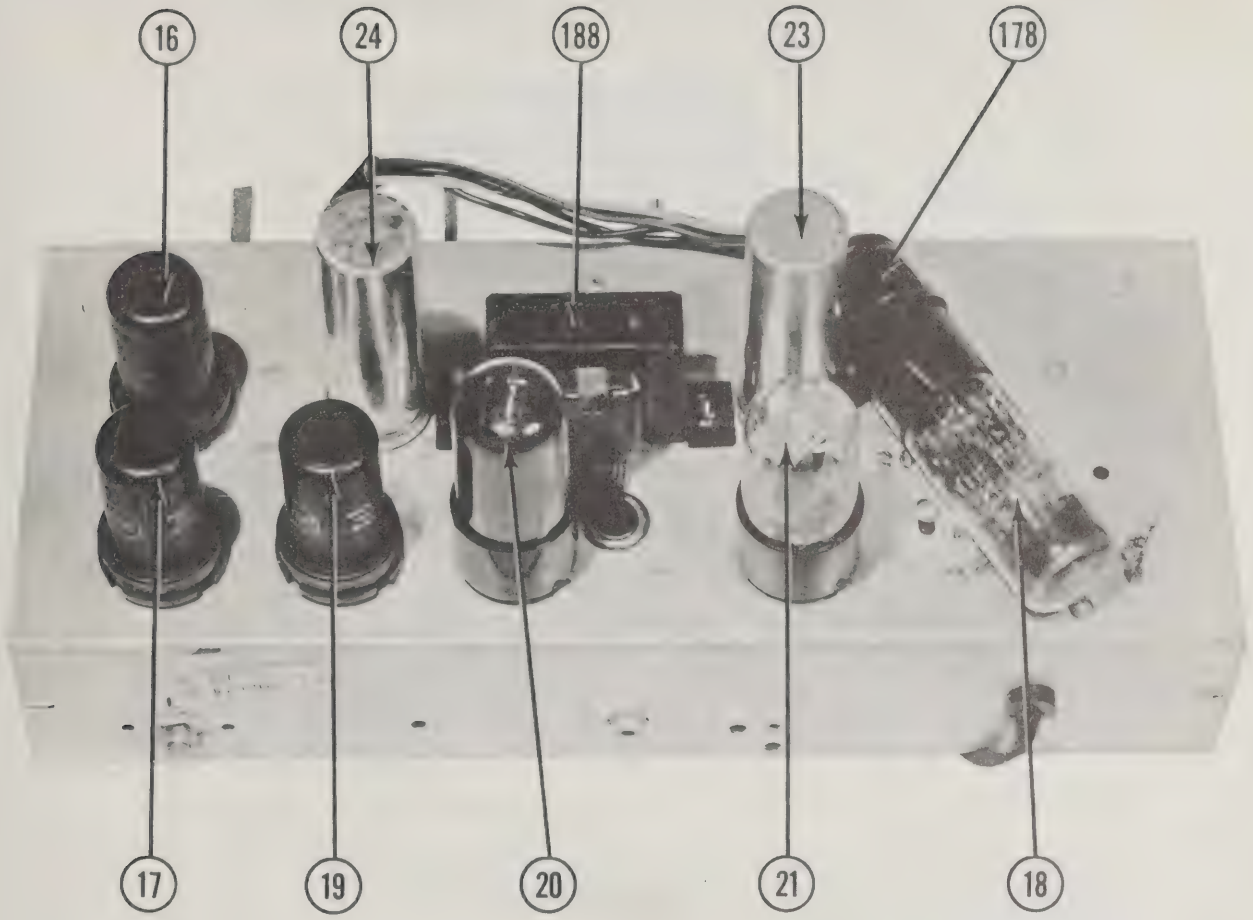
©Howard W. Sams & Co., Inc. 1949

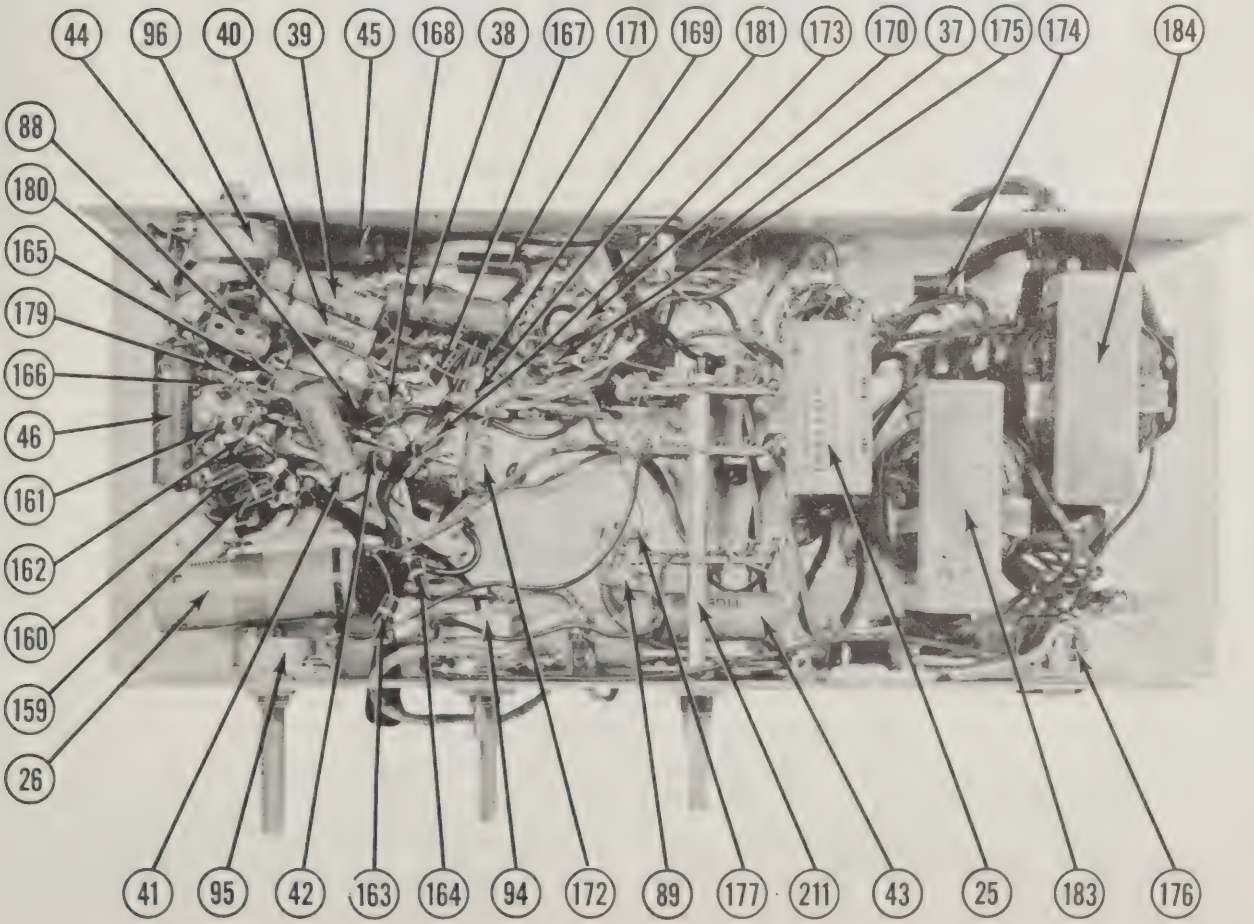

6BA6
6BA6
6AL5
6AT6
6SJ7
6J5
SECT. I FRONT
SECT. I REAR
4700 Ω
100 K
100 K
47 K
2.2 MEG
470 K
470 K
.02
.05
.005
.01
.01
.002
.05
.01
.05
.05
.5
.01
.01
.005
.05
.05
.05
.01
.01
.01



A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949


16
24
188
23
178
17
19
20
21
18


44
96
40
39
45
168
38
167
171
169
181
173
170
37
175
174
184
88
180
165
179
166
46
161
162
160
159
26
41
95
42
163
164
94
172
89
177
211
43
25
183
176

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning cap fully closed and set pointer 1 3/4" from left edge of dial backplate. This is the calibration mark referred to in steps below.
AM alignment must be completed before FM alignment is attempted.
Use an insulated screwdriver for all adjustments.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to center AM stator of tuning cap. Low side to chassis.	455KC	AM (Center)	Tuning cap fully open	Across voice coil.	A1,A2 A3,A4	Adjust for maximum output.
2.	.1MFD in series with 400Ω carbon res.	High side to external ant. clip. Low side to chassis.	1650KC	"	"	"	A5	" " " "
3.	"	"	535KC	"	Tuning cap fully closed	"	A6	Adjust for maximum output. Repeat steps 2 & 3 until no further improvement can be made.
4.	"	"	1400KC	"	Tune for maximum output.	"	A7,A8	Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	Direct	High side to center FM stator of tuning cap. Low side to chassis.	10.7MC (Unmod.)	FM (clockwise)	Tuning cap fully open.	DC Probe to point A. Common to chassis.	A9,A10 A11, A12, A13	Solder a 5000Ω carbon resistor across secondary of 1st FM-IF XFMR 202. Solder another 5000Ω resistor across secondary of 2nd FM IF XFMR 204. Adjust A9, thru A13 for maximum output. Attenuate output of sig. gen. to maintain meter reading of 1/2 to 1 Volt.
6.	Direct	"	"	"	"	DC Probe to point B. Common to chassis.	A14	Adjust for zero deflection. Remove the two 5000Ω resistors. Continue with FM-RF alignment in step 8.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
5.	.01MFD	High side to pin 1 (Grid) of 6BA6 1st IF tube (4). Low side to chassis.	10.7MC (freq.mod)	FM (clockwise)	Tuning cap fully open	Vertical input to point A. Ground to chassis.	A13, A12, A11	Disconnect 5MFD cap 29 from point A. Adjust A13, A12, A11 for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
6.	.01MFD	High side to pin 11 of sec. 2 front of band switch. Low side to chassis.	"	"	"	"	A10, A9	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1 . Reconnect cap 29 to point A.
7.	.01MFD	High side to pin 1 (Grid) of 6BA6 1st IF tube(4). Low side to chassis.	"	"	"	Vertical input to point B. Ground to chassis.	A14	Adjust for maximum straightness of cross-over lines with cross-occurring at center of pattern per Fig. 2. Continue with FM-RF alignment in step 8.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	2 150Ω carbon res.	Each side to FM ant. terminal. Low side to chassis.	100MC (Unmod.)	FM	3 5/16" from calibration mark	DC Probe to point A. Common to chassis.	A15	Adjust for maximum deflection.
9.	"	"	90MC (Unmod)	"	Tune for maximum deflection.	"	A16, A17	" "
10	"	"	106MC (Unmod.)	"	"	"	A18, A19	Adjust for maximum deflection. Repeat steps 8,9, and 10 until no further improvement can be made.

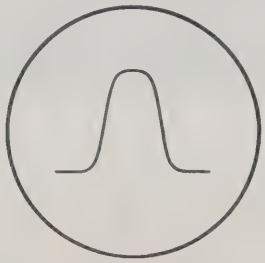
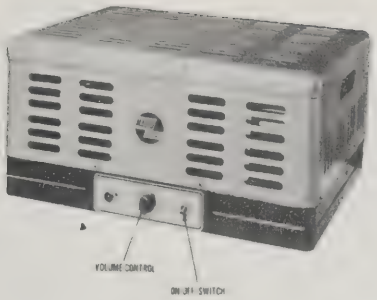


FIG. 1

FIG. 2



MASCO MODEL MB-75

TRADE NAME	Masco, Model MB-75
MANUFACTURER	Mark Simpson Mfg. Co., Inc. 32-28 49th St. Long Island City 3, New York
TYPE SET	AC Operated Audio Amplifier
TUBES (TEN)	Types 6SN7GT AF-Phase Inv., (2) 6V6GT Driver, (4) 6L6G Power Output, 5Y3GT Rectifier (2) 5V4G Rectifier
POWER SUPPLY	110-120 Volts AC RATING 1.9 Amp., @ 117 Volts AC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SN7GT	0V	130VDC	4.8VDC	0V	125VDC	4.8VDC	23VDC*	23VDC*
2	6V6GT	0V	23VDC*	310VDC	310VDC	0V	125VDC	23VDC*	23VDC
3	6V6GT	0V	23VDC*	310VDC	310VDC	0V	0V	23VDC*	23VDC
4	6L6G	0V	23VDC*	410VDC	320VDC	-25VDC	-25VDC	23VDC*	0V
5	6L6G	0V	23VDC*	410VDC	320VDC	-25VDC	-25VDC	23VDC*	0V
6	6L6G	0V	23VDC*	410VDC	320VDC	-25VDC	-25VDC	23VDC*	0V
7	6L6G	0V	23VDC*	410VDC	320VDC	-25VDC	-25VDC	23VDC*	0V
8	5Y3GT	0V	330VDC	0V	340VAC	0V	340VAC	0V	330VDC
9	5V4G	0V	380VDC	0V	460VAC	0V	460VAC	0V	380VDC
10	5V4G	0V	380VDC	0V	450VAC	0V	450VAC	0V	380VDC

* 6.4VAC between filament pins.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6SN7GT	500KΩ	60KΩ*	1000Ω	10KΩ	60KΩ*	1000Ω	400Ω	400Ω
2	6U6GT	0Ω	400Ω	220Ω*	220Ω*	100KΩ	75KΩ	400Ω	400Ω
3	6V6GT	0Ω	400Ω	230Ω*	230Ω*	100KΩ	Inf.	400Ω	400Ω
4	6L6G	0Ω	400Ω	120Ω**	130Ω*	300Ω	280Ω	400Ω	0Ω
5	6L6G	0Ω	400Ω	120Ω**	130Ω*	300Ω	280Ω	400Ω	0Ω
6	6L6G	0Ω	400Ω	120Ω**	130Ω*	300Ω	280Ω	400Ω	0Ω
7	6L6G	0Ω	400Ω	120Ω**	130Ω*	300Ω	280Ω	400Ω	0Ω
8	5Y3GT	Inf.	10KΩ	Inf.	300Ω	Inf.	300Ω	Inf.	10KΩ
9	5V4G	Inf.	400KΩ	Inf.	250Ω	Inf.	250Ω	Inf.	400KΩ
10	5V4G	Inf.	400KΩ	Inf.	250Ω	Inf.	250Ω	Inf.	400KΩ

* Measured from pin 8 of 5Y3GT
** Measured from pin 8 of 5V4G

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-15 SET #61 FOLDER 15

MASCO
MODEL MB-75

PARTS LIST AND DESCRIPTIONS

MASCO MODEL MB-76

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
1	AF-Phase Inv.	6SN7GT	6SN7GT	9bD	
2	Driver	6V6GT	6V6GT	7AC	
3	Driver	6V6GT	6V6GT	7AC	
4	Power Output	6L6G	6L6G	7AC	
5	Power Output	6L6G	6L6G	7AC	
6	Power Output	6L6G	6L6G	7AC	
7	Power Output	6L6G	6L6G	7AC	
8	Rectifier	5Y3GT	5Y3GT	5T	
9	Rectifier	5V4G	5V4G	5L	
10	Rectifier	5V4G	5V4G	5L	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MASCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
11	16	600		GL600/16	KR616		D-16-600	AP-16	Filter Note
12	16	450		PRS450/16	BR1645		M-16-450	UT-16	Filter
13	16	450		PRS450/16	BR1645		M-16-450	UT-16	Filter
14A	40	150		PRSA150/40 -40	EDL4415		DSB-2X40-150	TA-440	Bias Filter
B	40	150							Bias Filter
15	8	450		PRS450/8	BR845		M-8-450	UT-8	Decoupling
16	.1	600		630T-1	DYFT-6010		XLMR6-1	TM-1	Line Filter
17	.005	600		684-005	GT6D5	GP2M-005	ST-6-005	TC-25	Tone Compensation
18	.1	600		684-1	GT6P1		ST-6-1	TC-1	Audio Coupling
19	.1	600		684-1	GT6P1		ST-6-1	TC-1	" "
20	.1	600		684-1	GT6P1		ST-6-1	TC-1	" "

Note. Some models use 8MFD in this application.

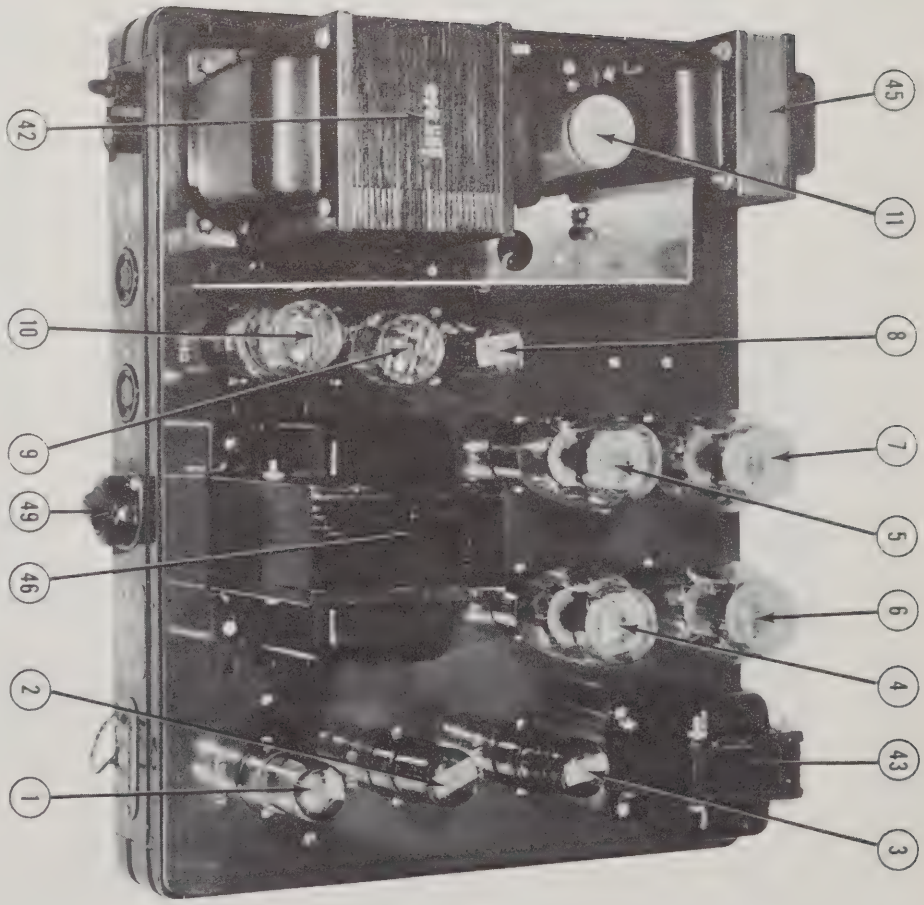
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
21A	500KΩ	½		D13-133	M-60-Z	Volume Control
B	Shaft			A	Not Req.	Attach to 21A Per Instructions.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	IDENTIFICATION CODES	
22	270Ω	½		BW-½-270	Red-Vi.-Br.	Balancing
23	270Ω	½		BW-½-270	Red-Vi.-Br.	"
24	1000Ω	½		BTS-1000	Br.-Blk.-Red	1st AF Cathode
25	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	1st AF Plate Load
26	47KΩ	½		BTS-47K	Yl.-Vi.-Or.	Phase Inv. Plate Load
27	10KΩ	½		BTS-10K	Br.-Blk.-Or.	Phase Inv. Grid
28	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	Driver Grid
29	100KΩ	½		BTS-100K	Br.-Blk.-Yl.	" "
30	400Ω	10		AB-400		Driver Cathode
31	18Ω	½		BW-½-18	Br.-Gray-Blk.	Output Grid
32	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
33	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
34	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
35	18Ω	½		BW-½-18	Br.-Gray-Blk.	Parasitic Suppressor
36	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
37	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
38	18Ω	½		BW-½-18	Br.-Gray-Blk.	" "
39	10KΩ	20		DG-10K		Bleeder
40	250Ω	10		AB-250		Bias
41	12KΩ	½		BTS-12K	Br.-Red-Or.	Filter

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
42	117VAC 1.9A	630VAC CT .11ADC	880VAC CT .25ADC	50VAC 2A	A-75			
		SEC. 4	SEC. 5					
		5.0VAC 4.0A	6.5VAC 6.0A					

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	MASCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
43	.25A	68Ω	6H	C-575	C-1703 *		C-3196 *	*Drill new mtg. Holes
44	.090A	130Ω	3.2H	C-178	C-2303		C-2993 #	#Mount on chassis.

TRANSFORMER (DRIVER)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
45			195Ω CT	40Ω CT	IN-75	A-4210 *	PCD-25 *	A-3123 *	*Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
46	2500Ω CT	4Ω 8Ω 12Ω 250Ω 500Ω	62Ω CT	.6Ω .9Ω 1.5Ω 10Ω 15Ω	0-75	A-3802 *			*Drill new mounting holes.

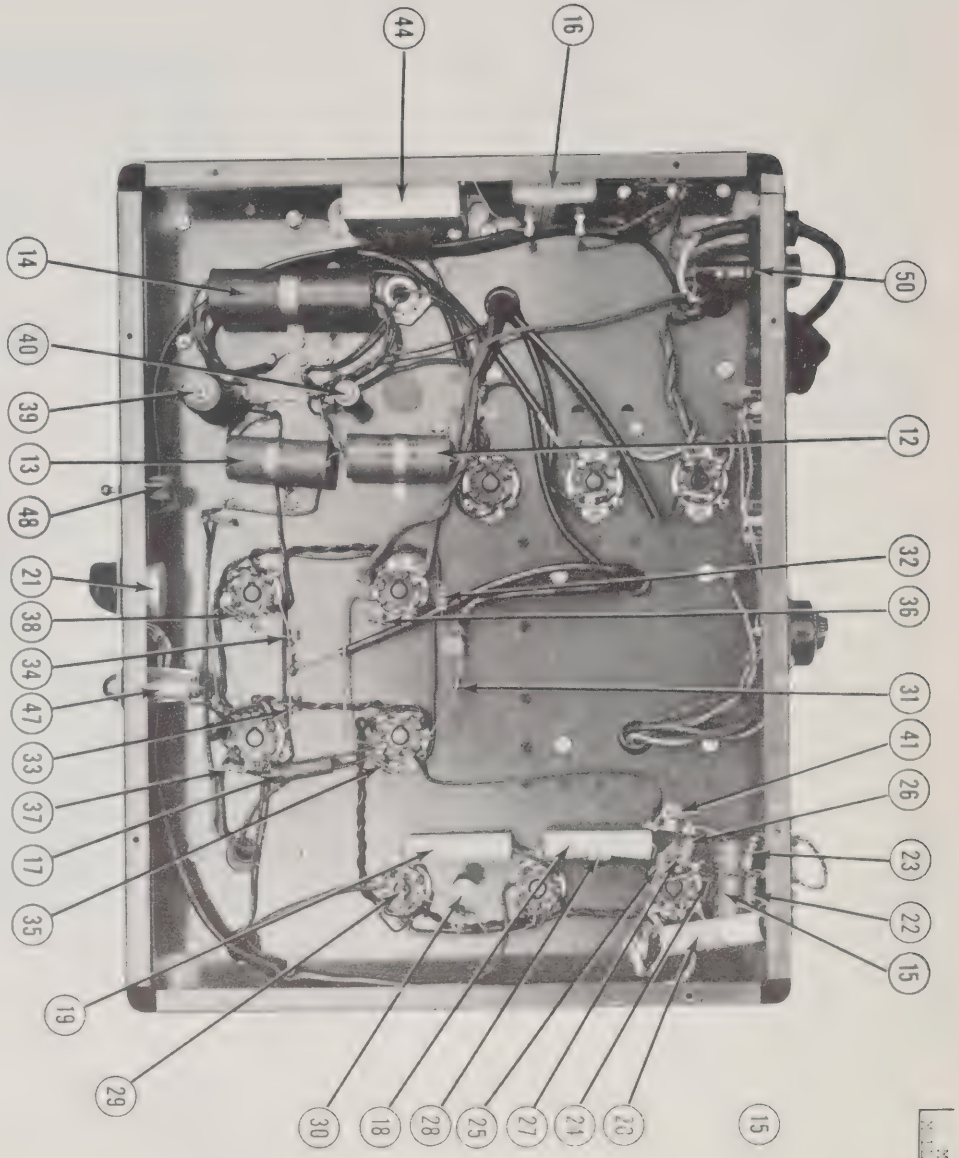
DIAL LIGHTS

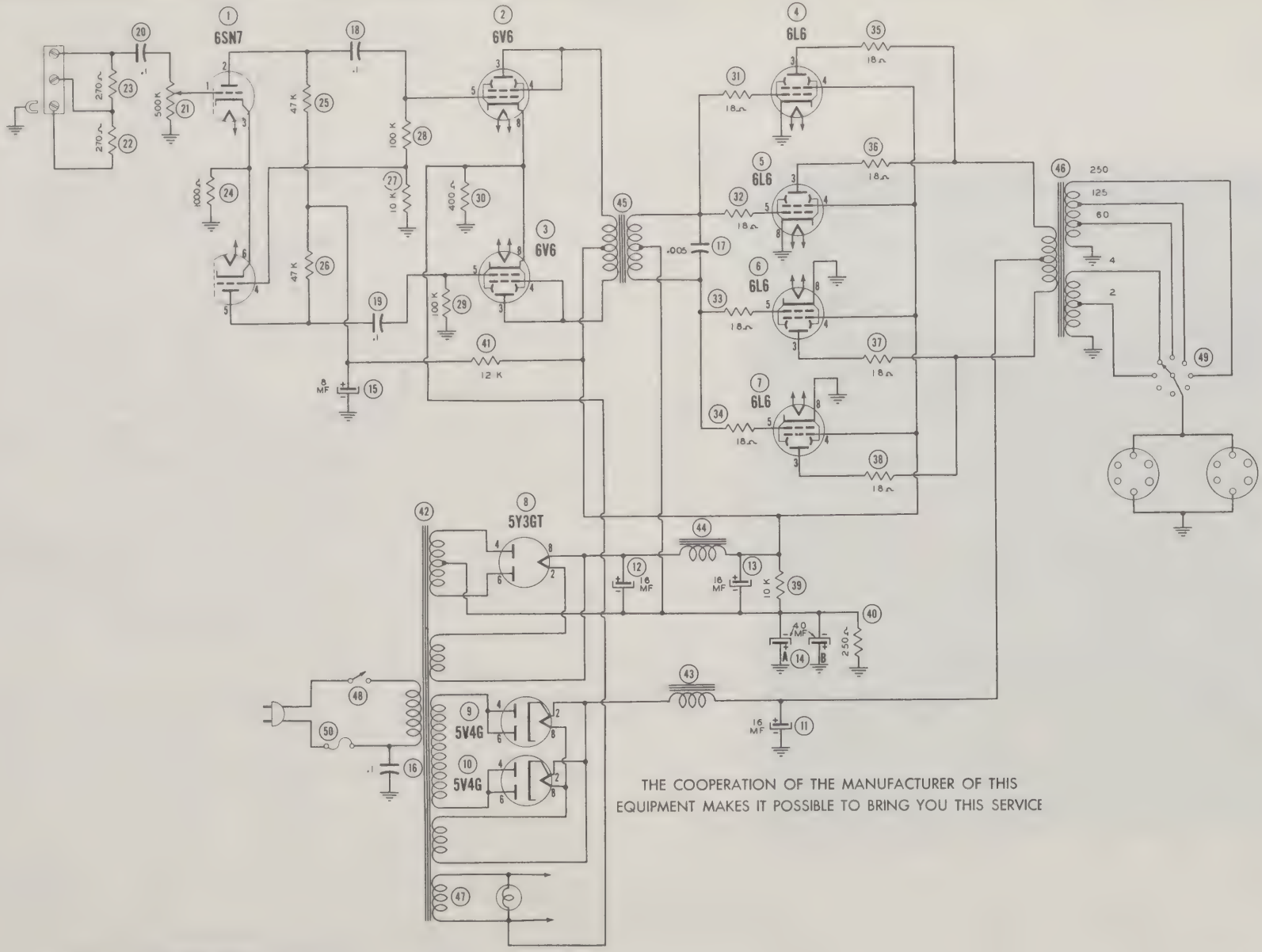
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
47	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	MASCO PART No.	NOTES
48	Switch		On-Off
49	Switch		Impedence Selector
50	Fuse		5 Amp.

CHASSIS—BOTTOM VIEW





A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949

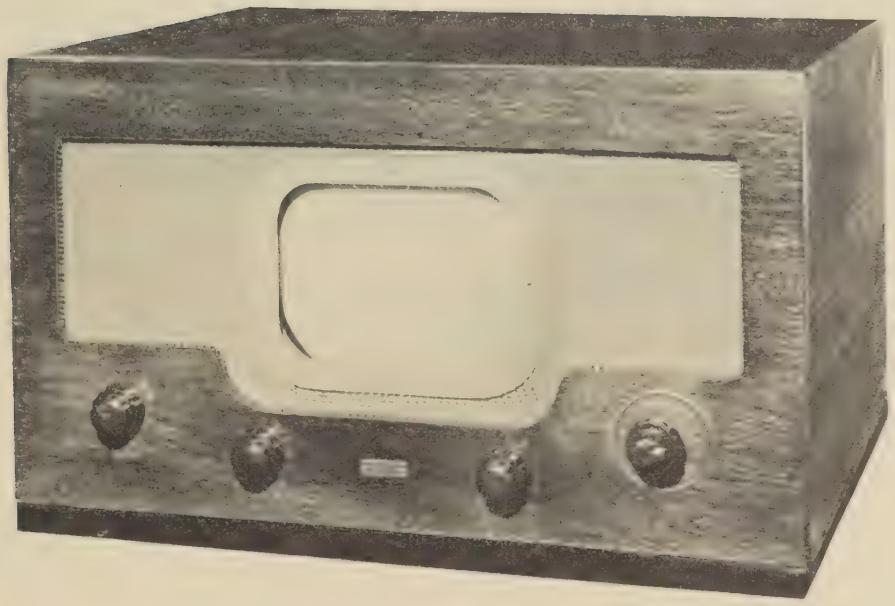
PHOTOFACT* Folder

MECK MODEL
XA-701

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

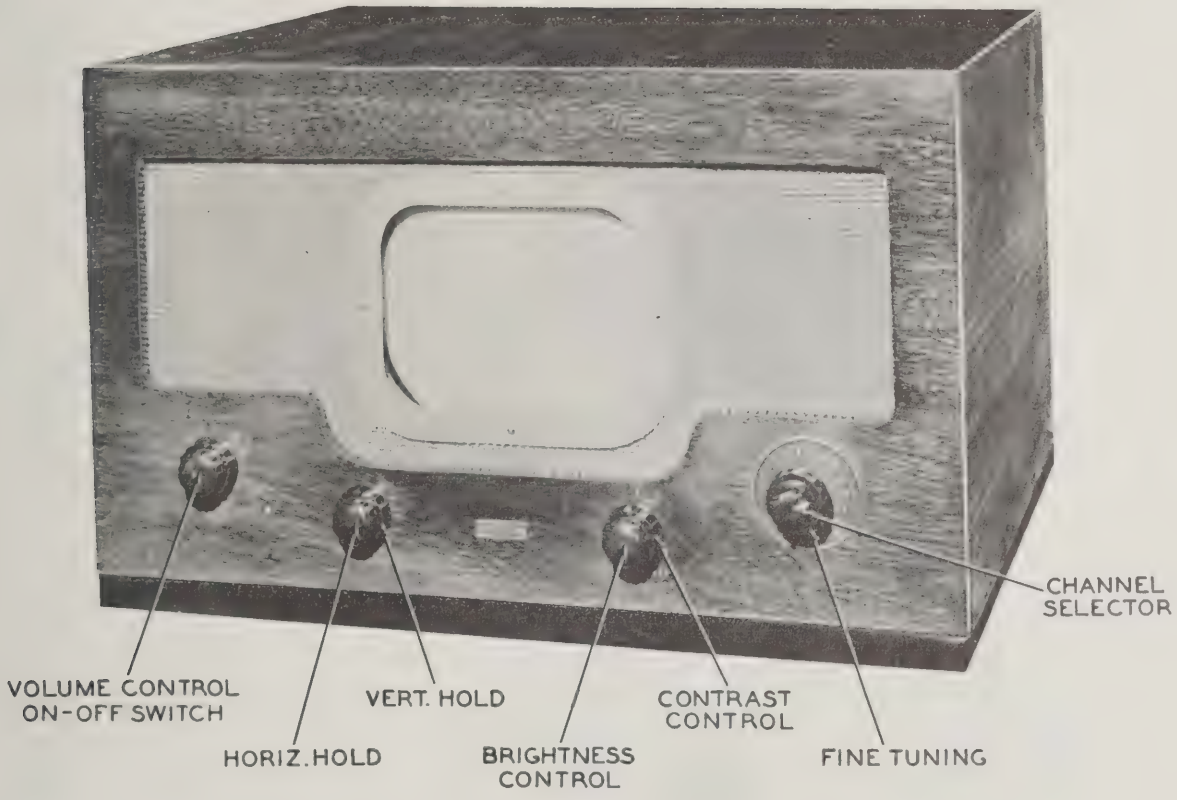


MECK MODEL
XA-701

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

Date 5/49—No. 499-16 Set No. 61—Folder No. 16



MECK
MODEL XA-701

MECK MODEL XA-701

TRADE NAME	Meck Model XA-701
MANUFACTURER	John Meck Industries, Plymouth, Indiana
TYPE SET	Television Receiver
TUBES	Twenty-Two

POWER SUPPLY 105-125 Volts. 60 cycle AC RATING .97 Amps. @ 117 Volts
TUNING RANGE—Channels 2 through 13.

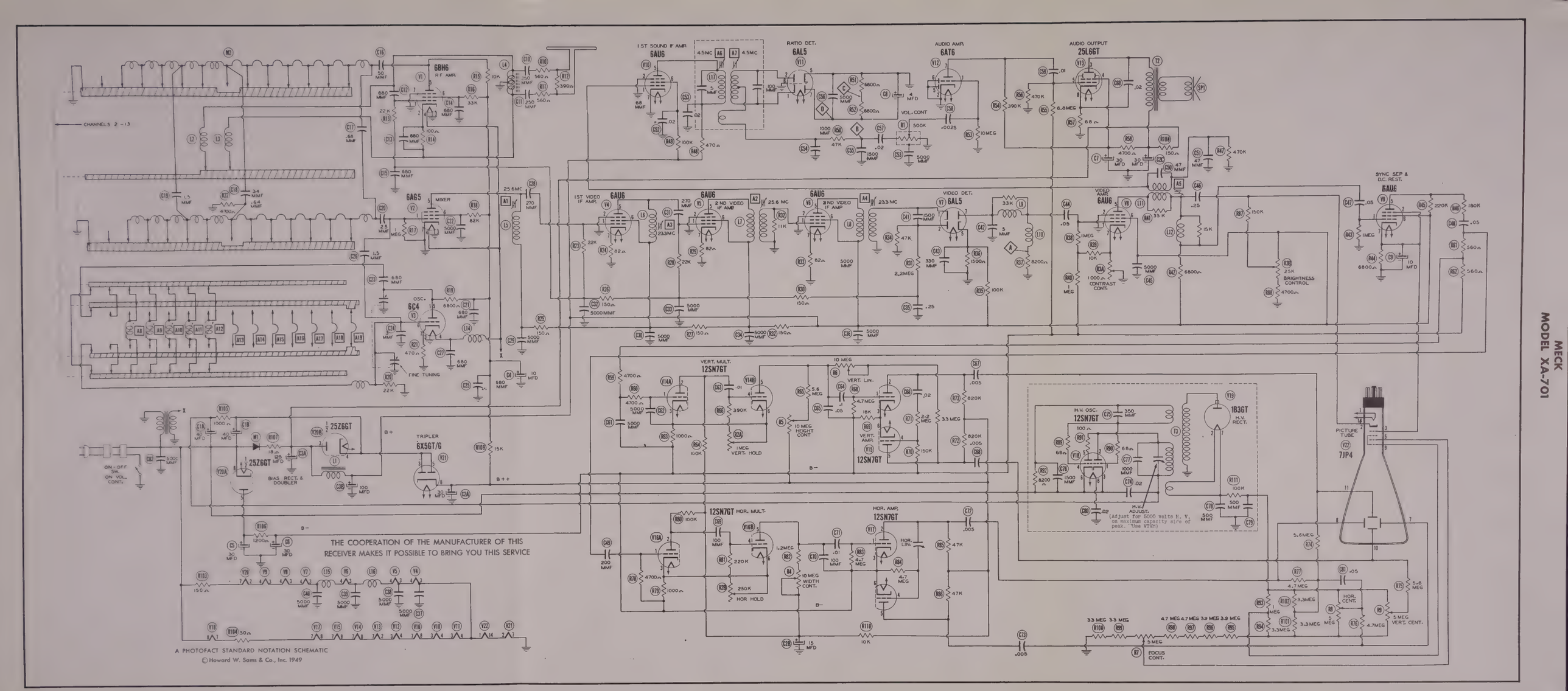
INDEX

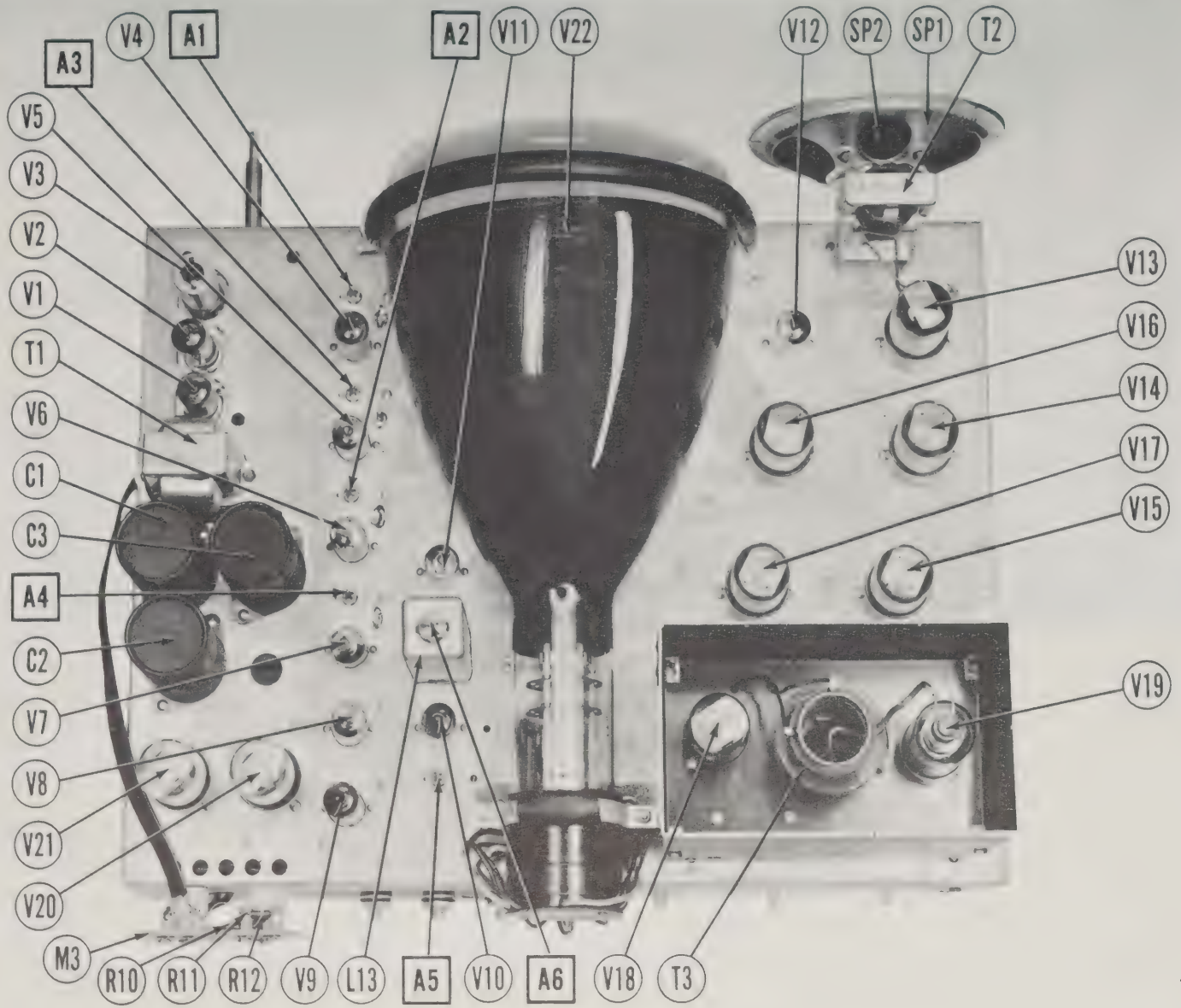
	Page
Alignment Instructions	10
Block Diagram	13
Parts List and Description	14,15,16
Photographs	
Cabinet Rear View	16
Capacitor Identification	11,18
Chassis Top View	3
High Voltage Supply	10
Photographs (continued)	
RF Tuner Left Side	7
RF Tuner Right Side	6
Resistor Identification	12,17
Trans., Inductor & Alignment Identification	4,9
Schematic	2
Tube Placement Chart	5
Voltage and Resistance Measurements	8

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

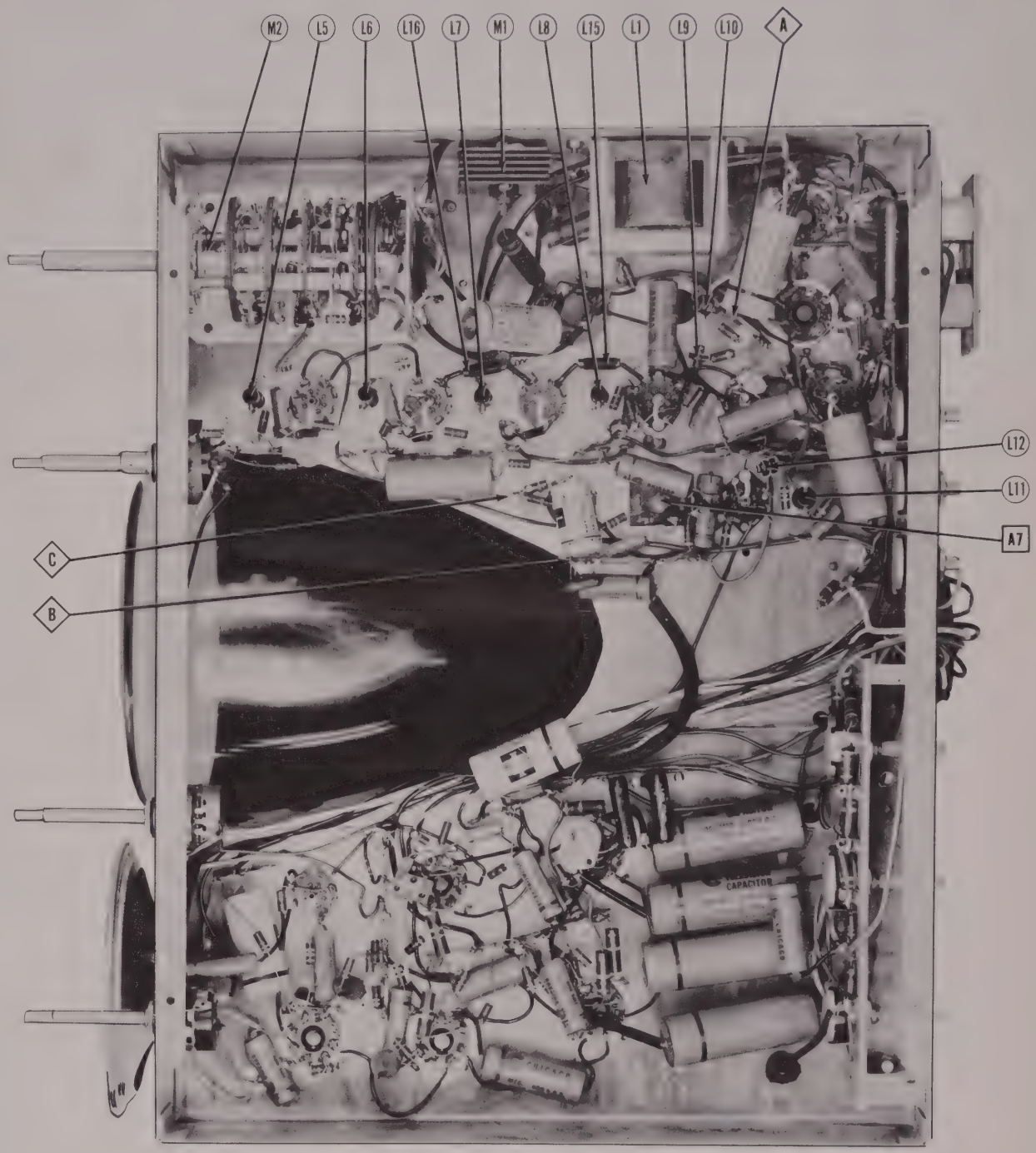
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-16 SET #61 FOLDER 16

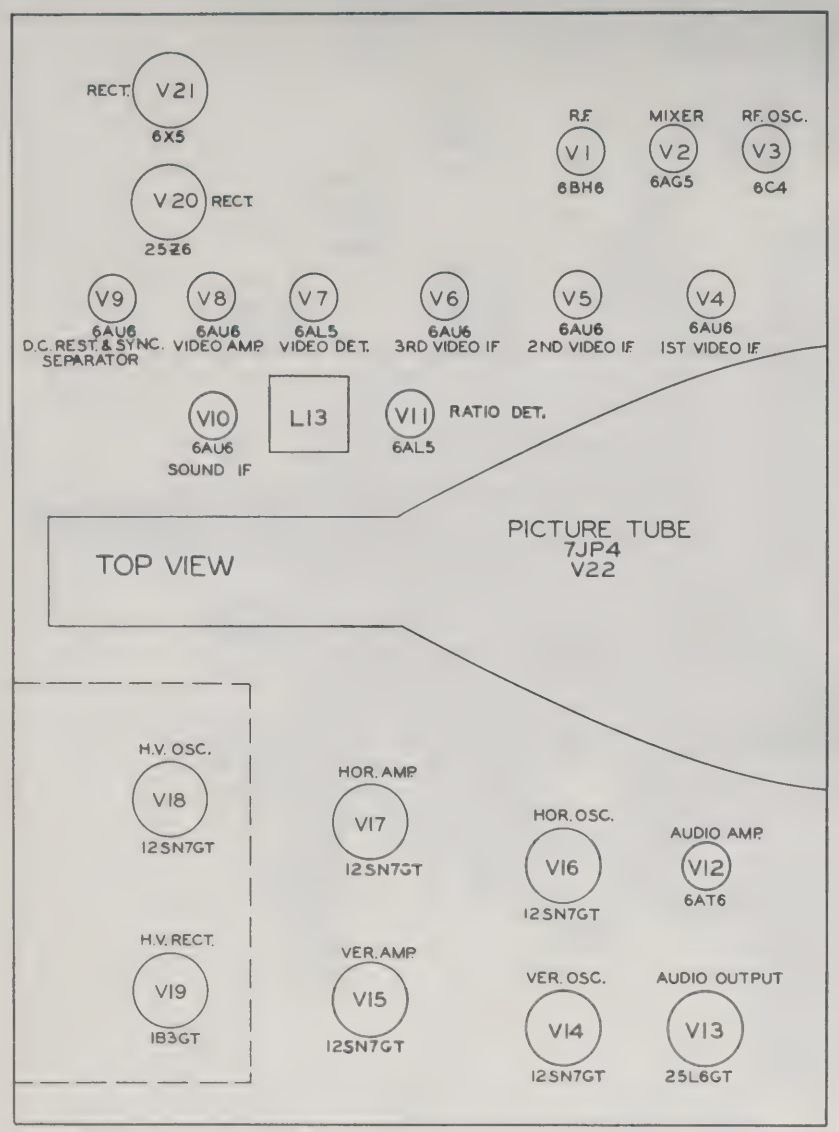

MECK
MODEL XA-701
CHANNELS 2 - 13
6BH6 R.F. AMP.
6AG5 MIXER
6C4 OSC.
FINE TUNING
1ST SOUND IF AMP 6AU6
4.5MC
4.5MC
RATIO DET. 6AL5
AUDIO AMP. 6AT6
AUDIO OUTPUT 25L6GT
VOL. CONT
1ST VIDEO IF AMP. 6AU6
2ND VIDEO IF AMP 6AU6
25.6MC
2ND VIDEO IF AMP 6AU6
23.3MC
VIDEO DET. 6AL5
VIDEO AMP. 6AU6
CONTRAST CONT.
BRIGHTNESS CONTROL
SYNC SEP & D.C. REST. 6AU6
VERT. MULT. 12SN7GT
VERT. LIN.
VERT. HOLD
VERT. AMP. 12SN7GT
HEIGHT CONT
WIDTH CONT.
12SN7GT HOR. MULT.
HOR HOLD
HOR. AMP. 12SN7GT
HOR. LIN.
H.V. OSC. 12SN7GT
1B3GT H.V. RECT.
H.V. ADJUST.
(Adjust for 8000 volts H. V. on maximum capacity side of peak. *See VT171)
PICTURE TUBE V22 7JP4
HOR. CENT.
5 MEG VERT. CENT.
FOCUS CONT.
ON-OFF SW. ON VOL. CONT.
BIAS. RECT. & DOUBLER 25Z6GT
25Z6GT
TRIPLER 6X5GT/G
B+
B++
B-
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1949

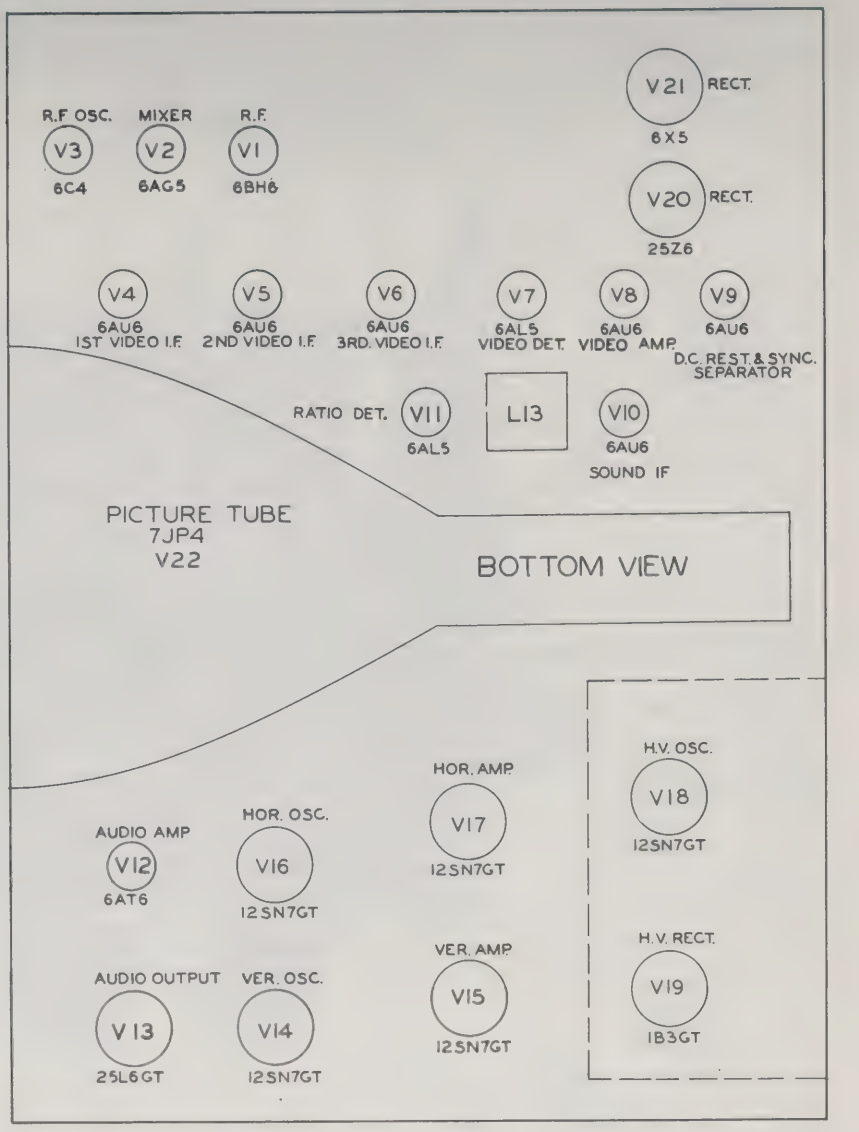


CHASSIS TOP VIEW

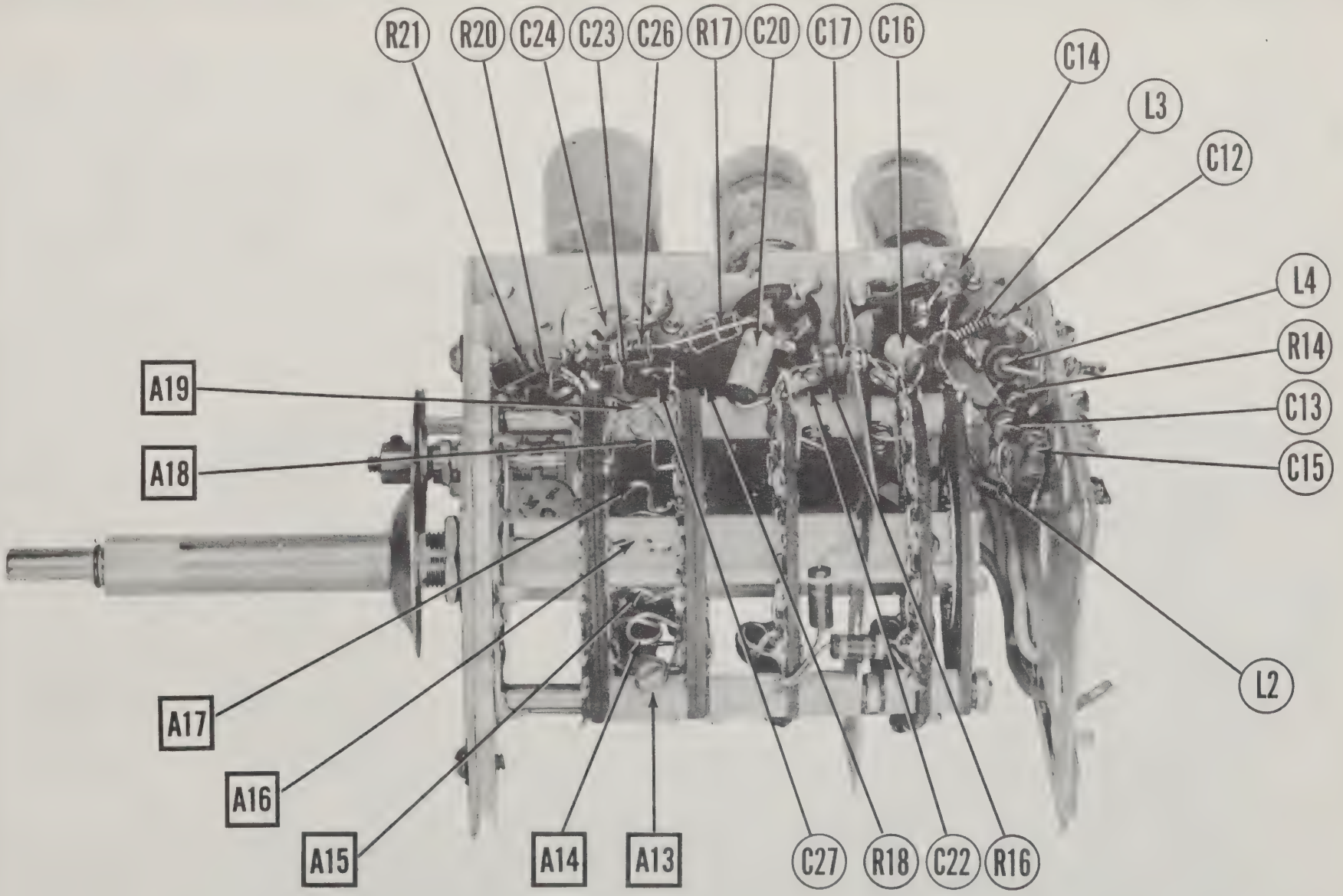


CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

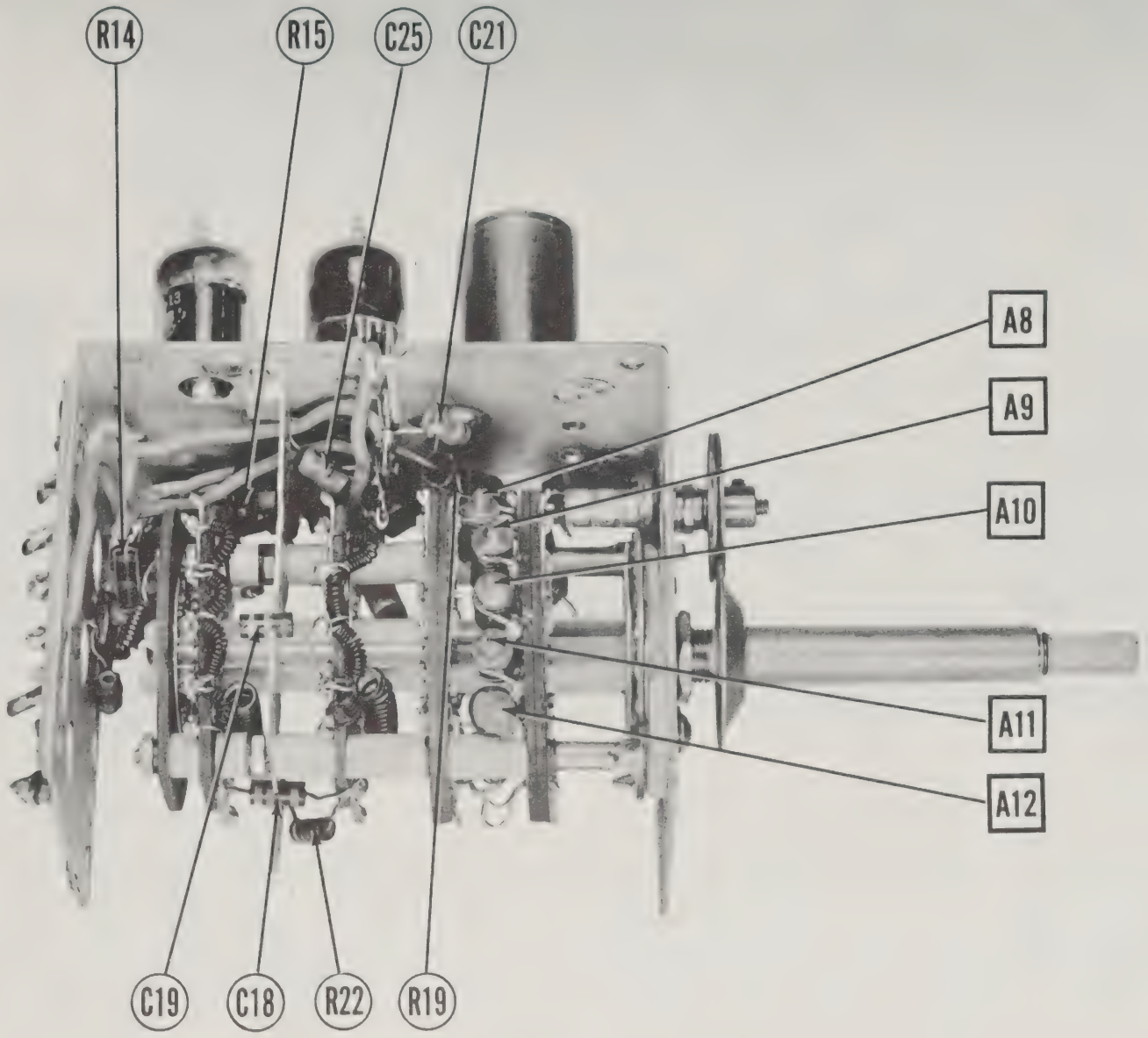




TUBE PLACEMENT CHART



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BH6	-.1VDC	.5VDC	0V	6.3VAC	135VDC	115VDC	0V		
V 2	6AG5	-.4VDC	0V	0V	6.3VAC	120VDC	83VDC	0V		
V 3	6C4	135VDC	0V	0V	6.3VAC	135VDC	0V	3.4VDC		
V 4	6AU6	-.1VDC	0V	11VAC	17VAC	120VDC	120VDC	.7VDC		
V 5	6AU6	-.1VDC	0V	17VAC	24VAC	120VDC	120VDC	.6VDC		
V 6	6AU6	0V	0V	24VAC	30VAC	125VDC	125VDC	.7VDC		
V 7	6AL5	0V	0V	30VAC	36VAC	1.7VDC	0V	-.3VDC		
V 8	6AU6	.2VDC	0V	36VAC	42VAC	90VDC	125VDC	7.2VDC		
V 9	6AU6	0V	3.8VDC	42VAC	49VAC	26VDC	125VDC	3.8VDC		
V 10	6AU6	-.4VDC	0V	22VAC	16VAC	125VDC	43VDC	0V		
V 11	6AL5	-.1VDC	-.1VDC	16VAC	11VAC	0V	0V	-.2VDC		
V 12	6AT6	-.5VDC	0V	39VAC	33VAC	0V	0V	47VDC		
V 13	25L6GT	0V	39VAC	120VDC	112VDC	-2VDC	0V	55VAC	1.2VDC	
V 14	12SN7GT	‡ 18VDC	‡ 110VDC	‡ 22VDC	‡ 12VDC	‡27VDC ‡17VDC	‡ 22VDC	68VAC	55VAC	
V 15	12SN7GT	‡ .8VDC	100VDC	‡ 30VDC	‡ 16VDC	90VDC	‡ 30VDC	80VAC	68VAC	
V 16	12SN7GT	‡ 18VDC	‡ 110VDC	‡ 22VDC	‡ 21VDC	‡57VDC ‡22VDC	‡ 22VDC	33VAC	22VAC	
V 17	12SN7GT	‡ .8VDC	135VLC	‡ 19VDC	‡ .8VDC	145VDC	‡ 18VDC	90VAC	80VAC	
V 18	12SN7GT	-100VDC	205VDC	117VAC	-108VDC	205VDC	117VAC	90VAC	117VAC	
V 19	1B3GT	† DO NOT MEASURE								
V 20	25Z6GT	0V	49VAC	130VDC	236VDC	-145VDC	0V	70VAC	117VAC	
V 21	6X5GT	0V	5.8VAC	235VDC	0V	235VDC	0V	0V	360VDC	

	Pins	1	2	3	4	5	6	7	8	9	10	11	12	13	14
V22	7JP4	11VAC	125VDC	1.8VDC	0V	†	0V	†	†	†	†	0V	0V	†	5.8VAC

‡ Measured from pin 5 of V20
† Do not measure. An accurate measurement can not be made, due to high impedence of circuit.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	TOP CAP
V 1	6BH6	2.5 Meg.	100Ω	0Ω	.5Ω	**23KΩ	**50KΩ	0Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.5Ω	*500Ω	**90KΩ	0Ω		
V 3	6C4	**20KΩ	Inf.	0Ω	.5Ω	**20KΩ	22KΩ	500Ω		
V 4	6AU6	2.5 Meg.	0Ω	3Ω	7Ω	*390Ω	*390Ω	82Ω		
V 5	6AU6	2.5 Meg.	0Ω	7Ω	12Ω	*210Ω	*210Ω	82Ω		
V 6	6AU6	.2Ω	0Ω	12Ω	16Ω	*70Ω	*70Ω	82Ω		
V 7	6AL5	.2Ω	50KΩ	16Ω	18Ω	1500Ω	0Ω	8.5KΩ		
V 8	6AU6	1 Meg.	0Ω	18Ω	22Ω	*7KΩ	*70Ω	1000Ω		
V 9	6AU6	1 Meg.	6.8KΩ	22Ω	25Ω	*220KΩ	*70Ω	6.8KΩ		
V 10	6AU6	470KΩ	0Ω	10Ω	6Ω	*560Ω	*100KΩ	0Ω		
V 11	6AL5	Inf.	Inf.	6Ω	3Ω	0Ω	0Ω	14KΩ		
V 12	6AT6	10 Meg.	0Ω	24Ω	19Ω	0Ω	0Ω	*390KΩ		
V 13	25L6GT	0Ω	24Ω	*320Ω	*5.5KΩ	470KΩ	Inf.	34Ω	68Ω	
V 14	12SN7GT	‡11KΩ	**110KΩ	‡2KΩ	‡400KΩ	**6.8Meg. **15Meg.	‡2KΩ	44Ω	34Ω	
V 15	12SN7GT	‡4.7Meg.	**800KΩ	‡19KΩ	‡150KΩ	**800KΩ	‡19KΩ	54Ω	44Ω	
V 16	12SN7GT	‡5KΩ	**110KΩ	‡2KΩ	‡220KΩ	**11Meg. **1.3Meg.	‡2KΩ	19Ω	10Ω	
V 17	12SN7GT	‡4.7Meg.	**47KΩ	‡1200Ω	‡4.7Meg.	**47KΩ	‡1200Ω	62Ω	54Ω	
V 18	12SN7GT	8KΩ	†1000Ω	54Ω	8KΩ	†1000Ω	54Ω	54Ω	100Ω	
V 19	1B3GT	Inf.	26 Meg.	Inf.	Inf.	Inf.	Inf.	26 Meg.	Inf.	700Ω
V 20	25Z6GT	Inf.	25Ω	22KΩ	180KΩ	800KΩ	Inf.	34Ω	56Ω	
V 21	6X5GT	Inf.	2Ω	180KΩ	Inf.	180KΩ	Inf.	0Ω	300KΩ	

	Pins	1	2	3	4	5	6	7	8	9	10	11	12	13	14
V22	7JP4	3Ω	* 150KΩ	6.8KΩ	Inf.	9.5Meg.	Inf.	30Meg.	30Meg.	26Meg.	32Meg.	32Meg.	Inf.	Inf.	2Ω

* Measured from pin 3 of V20
** Measured from pin 8 of V21
‡ Measured from pin 5 of V20
† Measured from pin 4 of V20

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

ALIGNMENT INSTRUCTIONS

VIDEO IF ALIGNMENT

Inject the IF signal by means of a FLOATING tube shield over the mixer tube V2.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Tube Shield	High side to Tube Shield over mixer Tube V2. Low side to chassis.	25.6MC (No. Mod.)	9	DC Probe to Point A. Common to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain 1 volt reading on VTVM.
2.	Tube Shield	"	23.3MC (No. Mod.)	"	"	A3, A4	" " " " "

Connect synchronized sweep voltage from signal generator to horizontal amplifier of scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Tube Shield	High side to Tube shield. Low side to chassis.	24MC (10MC Sweep)	21.6MC and 26.1MC	9	Vert. Amp. to Point A. Low side to chassis.	A1, A2, A3, A4	Observe pattern obtained and see that markers appear as per Fig. 1. If not, slight adjustment of A1, A2, A3, and A4 may give desired curve.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	5000MMF	High side to pin 1 (Grid) 6AU6 (V8). Low side to chassis.	4.5MC (Very Accurate)	9	DC Probe to point D. Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	5000MMF	"	"	"	DC Probe to Point B. Common to Point C.	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

The RF and Mixer lines are pre-set at the factory and are very stable and normally do not require adjustment in the field.

The local oscillator operates 24.35MC above the center frequency of each TV channel. To set the local oscillator, a separate "BFO" generator set at 24.35MC is used to obtain a zero beat with this difference frequency. Couple the "BFO" generator to the receiver by means of a few turns of hook-up wire coiled around the 6AL5 video detector (V7). Connect a .01MFD capacitor between pin 1 (Grid) of the 6AU6 video amp. (V8) to pin 1 of the 6AT6 audio Amp. (V12). Turn the fine tuning control to the midpoint of its range and set the channel selector switch to the channel which is to be aligned. The oscillator circuits of the individual channels are independent of each other and therefore only those channels requiring alignment need be adjusted.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	Two 150Ω carbon res.	Insert 150Ω resistor in each generator lead and connect across the antenna input. Connect BFO generator as indicated in above instructions.	57MC	2		A8	Adjust slugs or shift the coil turns for rough audio beat in the speaker.
			63MC	3		A9	
			69MC	4		A10	
			79MC	5		A11	
			85MC	6		A12	
			177MC	7		A13	
			183MC	8		A14	
			189MC	9		A15	
			195MC	10		A16	
			201MC	11		A17	
			207MC	12		A18	
			213MC	13		A19	

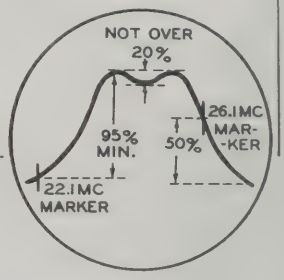
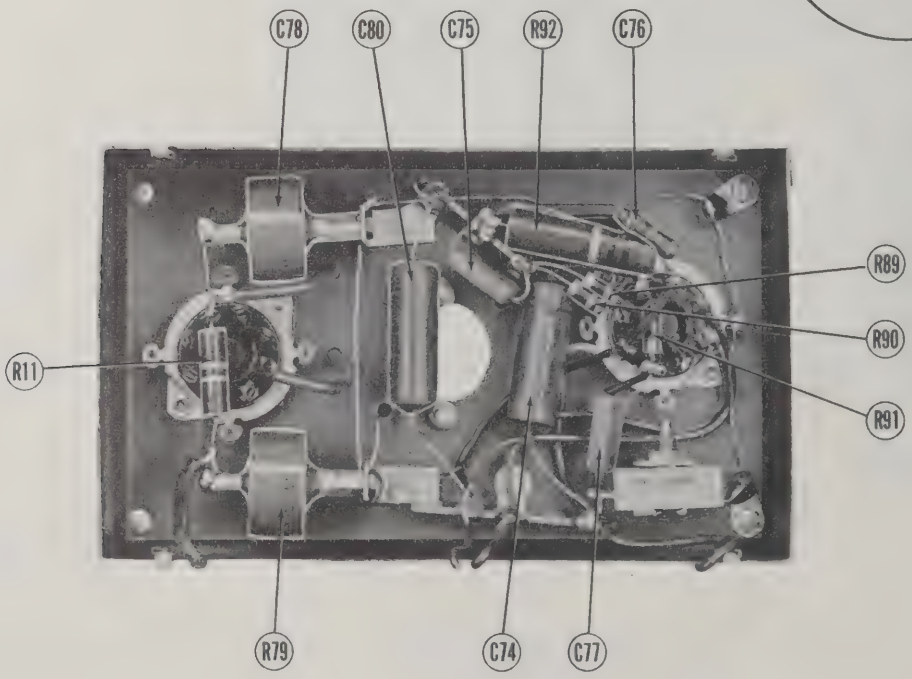
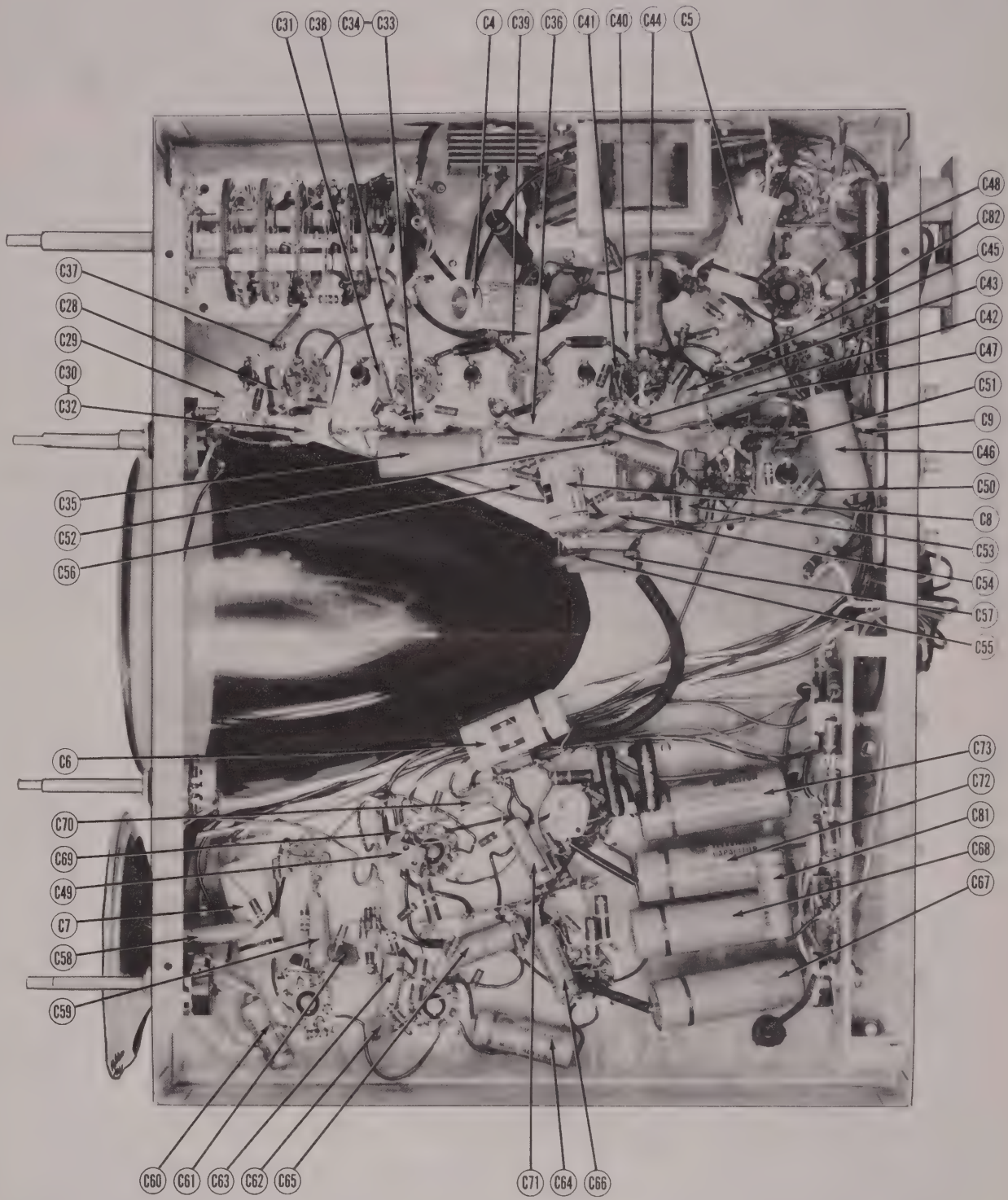


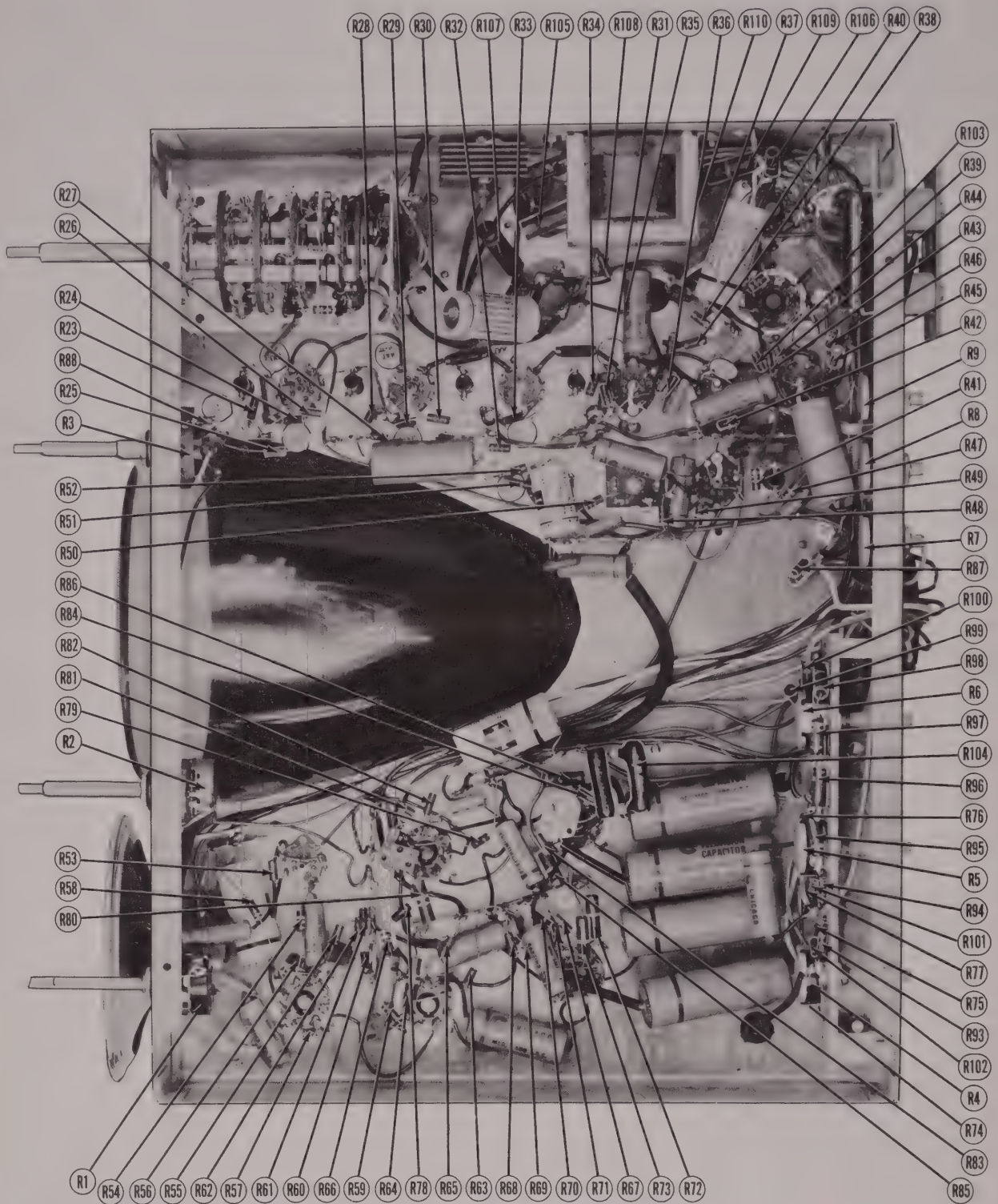
FIG. 1



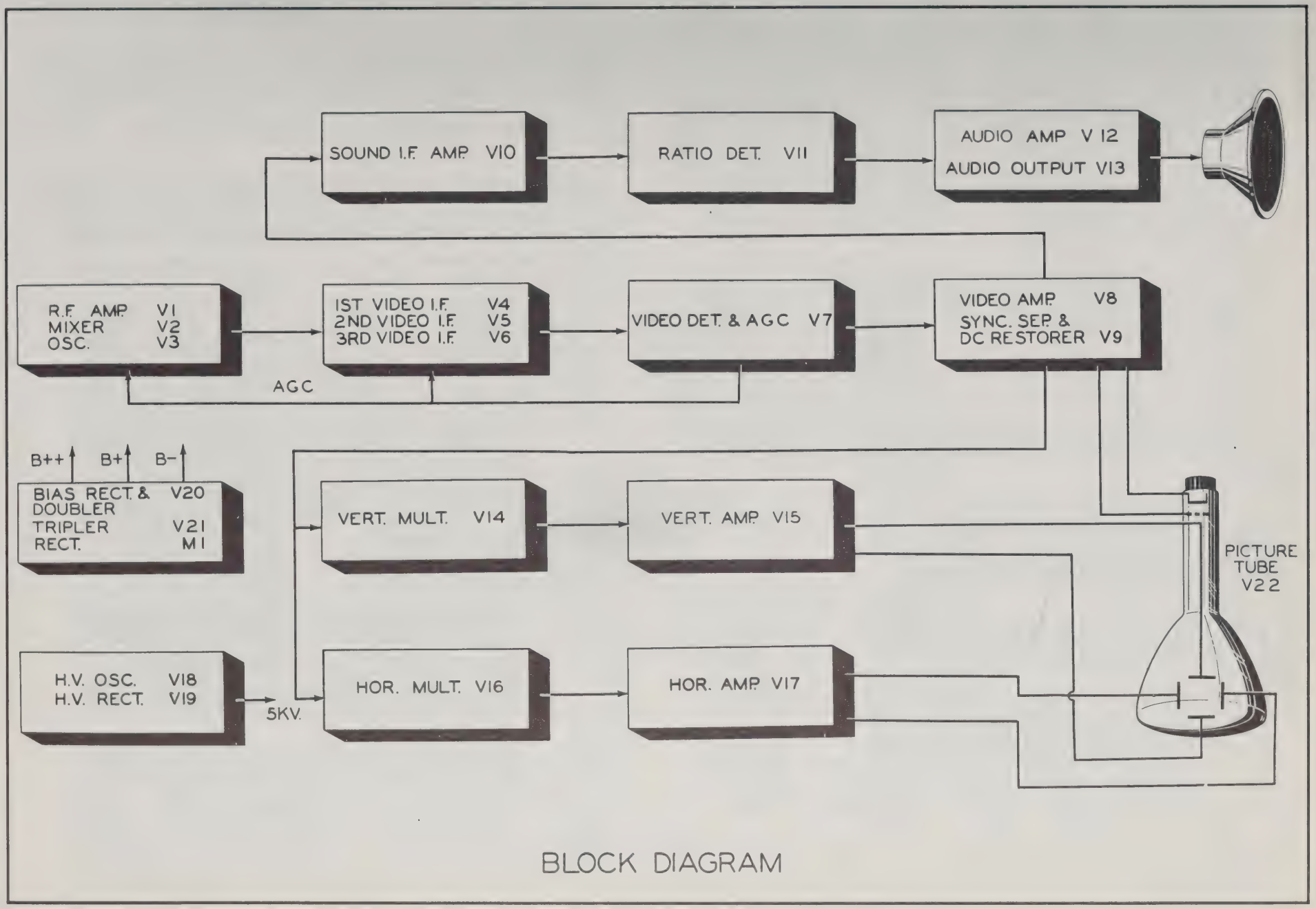
HIGH VOLTAGE SUPPLY - BOTTOM VIEW



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6BA6	6BA6	7GM	
V2	Mixer	6AB5	6AB5	7AD	
V3	Oscillator	6C4	6C4	6BG	
V4	1st IF Amp.	6AU6	6AU6	7BK	
V5	2nd IF Amp.	6AU6	6AU6	7BK	
V6	3rd IF Amp.	6AU6	6AU6	7BK	
V7	Video Det.-AGC Restorer	6AL5	6AL5	6BT	
V8	Video Amp.	6AU6	6AU6	7BK	
V9	Sync. Sep.-DC Restorer	6AU6	6AU6	7BK	
V10	Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Det.	6AL5	6AL5	6BT	
V12	AF Amp.	6AT6	6AT6	7BT	
V13	Audio Output	25C6GT	25C6GT	8AC	
V14	Vert. Mult.	12BH7AT	12BH7AT	8BD	
V15	Vert. Output	12BH7AT	12BH7AT	8BD	
V16	Horiz. Multivibrator	12BH7AT	12BH7AT	8BD	
V17	Horiz. Output	12BH7AT	12BH7AT	8BD	
V18	HV Osc.	12BH7AT	12BH7AT	8BD	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	Rectifier	2X2/879	2X2/879	6S	
V21	Tripler	6BW4	6BW4	6S	
V22	Picture Tube	7QP4	7QP4		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA AEROVOX PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	REPLACEMENT DATA ERIE PART No.	REPLACEMENT DATA SOLAR PART No.	REPLACEMENT DATA SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	CL-10033	A2S8U	UF4445			TVL-64	▲ Filter
B	40	350							● Doubler Cap.
C2A	30	450	CL-10035A	AF82U16D					◆ Filter
B	15	450							■ "
C	30	150							▲ "
C3A	125	150	CL-10034	AF101010 D4A*					◆ "
B	100	150		PRS150/50					▲ "
C4	10	450	CL-10036	AP2U	BR1045			TVA-21	Filter
C5	30	150	CL-10030	PRS150/30	BR3015			TVA-18	"
C6	30	150	CL-10030	PRS150/30	BR3015			TVA-18	"
C7	30	150	CL-10030	PRS150/30	BR3015			TVA-18	Decoupling
C8	4	50	CL-10027	PRS150/4	BR550			TVA-13	Stabilizing Cap.
C9	10	25	CL-10032	PRS50/10	BR102A			TVA-5	Sync. Sep. & DC Res. Cath. Bypass
C10	250		CC15251	1468-00025	5WST25		MO.5-325	1FM-325	Ant. Coupling
C11	250		CC15251	1468-00025	5WST25		MO.5-325	1FM-325	"
C12	680					GP2K-750			RF Coupling
C13	680					GP2K-750			RF Cath. Bypass Note 1
C14	680					GP2K-750			RF Screen Bypass
C15	680					GP2K-750			AGC Filter Note 2
C16	50					GP1K-50			RF Coupling
C17	.68								"
C18	.34								"
C19	1.5					NPOK-1.5			"
C20	25					GP1K-25			"
C21	680					GP2K-750			RF Bypass Note 2
C22	5000								Mixer Screen Bypass
C23	680					GP2K-750			Osc. Feedback
C24	3					NPOK-3			"
C25	680					GP2K-750			RF Bypass
C26	1.5					NPOK-1.5			Osc. Coupling
C27	680					GP2K-750			Osc. Fil. Bypass
C28	270	500	CM15271	1468-00025	5WST25	JF2K-250	MO.5-325	1FM-325	IF Coupling
C29	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Mixer, Plate Decoup.
C30	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Decoupling
C31	1270	500	CM15271	1468-00025	5WST25	JF2K-250	MO.5-325	1FM-325	IF Coupling
C32	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AGC Filter
C33	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AGC Filter
C34	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Decoupling
C35	.25	400	CP14254	P488-25	JT4P25		ST-4-25	TC-2	AGC Filter
C36	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C37	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Filament Bypass
C38	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	"
C39	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	"
C40	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	"
C41	1500		CC15152	1467-0015	1W5D1	GP2L-0015	MW.5-215	1FM-215	IF Coupling
C42	5		CC15050	1468-000005	5WSV5	NPOK-5	MO.5-55	MS-55	RF Bypass
C43	330	500	CM15331	1468-0003	5WST3	GP2K-300	MO.5-33	1FM-335	"
C44	.05	600	CP16503	P688-05	GT6S5		ST-6-05	TM-15	Video Coupling
C45	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Video Amp. Screen Byp.
C46	.25	400	CP14254	P488-25	JT4P25		ST-4-25	TC-2	Video Coupling
C47	.05	600	CP16503	P688-05	GT6S5		ST-6-05	TM-15	"
C48	.05	600	CP16503	P688-05	GT6S5		ST-6-05	TM-15	Sync. Coupling
C49	200	500	CM15201	1468-0002	5WST2	GP2K-200	MO.5-32	1FM-25	Hor. Sync. Coupling
C50	47	500	CM15470	1469-00005	5RS45	NP0M-50	MO5.5-45	MS-45	Fixed Trimmer
C51	47	500	CM15470	1468-00005	5WS45	GP1K-50	MO.5-45	1FM-45	Sound IF Grid Filter
C52	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	Sound IF Screen Byp.
C53	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	Sound IF Plate Decoup.
C54	1000	500	CM15102	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Diode Load Cap.
C55	1500		CC15152	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	De-emphasis
C56	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C57	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C58	.0025	600	CP16252	P688-0022	GT6D2	GP2M-0025	ST-6-002	TM-22	"
C59	.01	600	CP16103	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	"
C60	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	Output Plate Bypass
C61	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Integrator Net.
C62	5000		CM10002	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	"
C63	.01	600	CP16103	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Vert. Osc. Feedback
C64	.1	600	CP16104	P688-1	GT6P1		ST-6-1	TM-1	Vert. Coupling
C65	.05	600	CP16503	P688-05	GT6S5		ST-6-05	TM-15	Vert. Discharge
C66	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	Vert. Coupling
C67	.005	6000	CP60502	7584-005	D5TH 60D5		STH-60-005	TVM-256	Vert. Sweep Coupling
C68	.005	6000	CP60502	7584-005	D5TH 60D5		STH-60-005	TVM-256	" " "
C69	100	500	CM15101	1468-0001	5WST1	GP1K-100	MO.5-31	1FM-31	Hor. Osc. Feedback
C70	100	500	CM15101	1468-0001	5WST1	GP1K-100	MO.5-31	1FM-31	Hor. Discharge
C71	.01	600	CP16103	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Hor. Sweep Coupling
C72	.005	6000	CP60502	7584-005	D5TH 60D5		STH-60-005	TVM-256	" " "
C73	.005	6000	CP60502	7584-005	D5TH 60D5		STH-60-005	TVM-256	" " "
C74	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	RF Bypass Note 3
C75	351	500	CM15351	1469-00035				1FM-335	Fixed Trimmer
C76	1500		CC15152	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	HV Osc. Grid Cap.
C77	1000	500	CM15102	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Fixed Trimmer Note 4.
C78	500	10000	CX10000						HV Filter TN Oxide
C79	500	10000	CX10000						" " "
C80	.02	400	CP14203	P488-02	GT4S2		ST-4-02	TM-12	HV Osc. Fil. Bypass
C81	.05	600	CP16503	P688-05	GT6S5		ST-6-05	TM-15	Hor. Cent. Cont. Bypass
C82	1000		CMX10002	1467-005		GP2M-005	MW.5-25	1FM-25	Line Filter

* Parallel sections to obtain desired capacity.
Note 1. Some models use 500MMF in this application.
Note 2. Some models use 5000MMF in this application.
Note 3. Some models use 05MFD in this application.
Note 4. Not used in all models.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA IRC PART No.	REPLACEMENT DATA CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	VC12116A	D13-133	M-60-2	Volume Control
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	41	SW-A	" " "
R2A	1 Meg.	½	MC121128			Vert. Hold Control } Dual Concentric
B	250KΩ	½				Horiz. Hold Control }
R3A	100KΩ	½	VC12113B			Contrast Control
B	25KΩ	½				Brightness Control
R4A	10 Meg.	½	VC-12115B	D11-143		Width Control
B	Shaft		Not Req.	A		Attach to R4A Per Instructions
R5A	10 Meg.	½	VC12115B	D11-143		Height Control
B	Shaft		Not Req.	A		Attach to R5A Per Instructions
R6A	10 Meg.	½	VC12115B	D11-143		Vert. Linearity Control
B	Shaft		Not Req.	A		Attach to R6A Per Instructions
R7A	5 Meg.	½	VC12114A	D11-141		Focus Control
B	Shaft		Not Req.	A & C3 #		Attach to R7A Per Instructions
R8A	5 Meg.	½	VC12114A	D11-141		Horiz. Centering Control
B	Shaft		Not Req.	A & C3 #		Attach to R8A Per Instructions
R9A	5 Meg.	½	VC12114A	D11-141		Vert. Centering Control
B	Shaft		Not Req.	A & C3 #		Attach to R9A Per Instructions

Use an extra nut as a spacer to hold control back from control sub-panel as far as possible. Then saw off shaft of new control so that C3 coupler can be employed to connect part of original shaft, (Insulated shaft) to the new control. (Caution. Be sure that C3 coupler has plenty of clearance between itself and chassis.)

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA IRC PART No.	IDENTIFICATION CODES All resistors are ± 10% unless otherwise stated.	
R10	560Ω	½	RC35600	BTS-560	Grn.-Blue-Br.	Ant. Pad.
R11	560Ω	½	RC35600	BTS-560	Grn.-Blue-Br.	" "
R12	390Ω	½	RC33900		Or.-White-Br.	" "
R13	22KΩ	½	RC12202		Red-Red-Or.	RF Grid
R14	100Ω	½	RC31000		Br.-Blk.-Br.	RF Cathode
R15	10KΩ	1			Br.-Blk.-Or.	RF Plate
R16	33KΩ	½	RC33302	BTS-33K	Or.-Or.-Or.	RF Screen
R17	1 Meg.	½	RC31004		Br.-Blk.-Grn.	Mixer Grid
R18	82KΩ	½		BTS-82KΩ	Gray-Red-Or.	Mixer Screen
R19	68KΩ	1			Blue-Gray-Red	Osc. Plate
R20	22KΩ	½	RC12202		Red-Red-Or.	Osc. Grid
R21	470Ω	½	RC34700		Yl.-Vi.-Br.	Osc. Cathode
R22	47000Ω	½	RC34701		Yl.-Vi.-Red	Mixer Coil Shunt
R23	22KΩ	½	RC12202		Red-Red-Or.	1st Video IF Grid
R24	82Ω	½	RC10820		Gray-Red-Blk.	1st Video IF Cathode
R25	150Ω	½	RC31500		Br.-Grn.-Br.	Mixer Plate Decoupling
R26	150Ω	½	RC31500		Br.-Grn.-Br.	AGC Network
R27	150Ω	½	RC31500		Br.-Grn.-Br.	1st Video IF Decoupling
R28	22KΩ	½	RC12202		Red-Red-Or.	2nd Video IF Grid
R29	82Ω	½	RC10820		Gray-Red-Blk.	2nd Video IF Cathode
R30	150Ω	½	RC31500		Br.-Grn.-Br.	AGC Network
R31	2.2 Meg.	½	RC32204	BTS-2.2 Meg.	Red-Red-Grn.	" " "
R32	150Ω	½	RC31500		Br.-Grn.-Br.	2nd Video IF Decoupling
R33	82Ω	½	RC10820		Gray-Red-Blk.	3rd Video IF Cathode
R34	47KΩ	½	RC34703	BTS-47K	Yl.-Vi.-Or.	AGC Diode Load
R35	100KΩ	½	RC31003	BTS-100K	Br.-Blk.-Yl.	Voltage Divider Network
R36	150Ω	½	RC31501	BTS-1500	Br.-Grn.-Red	" " "
R37	8200Ω	½	RC38201	BTS-8200	Gray-Red-Red	Video Det. Load
R38	1 Meg.	½	RC31004	BTS-1 Meg-5%	Br.-Blk.-Grn.	Video Amp. Grid 5%
R39	10KΩ	½	RC31002	BTS-10K	Br.-Blk.-Or.	Bias Voltage Divider
R40	1 Meg.	½	RC31004	BTS-1 Meg-5%	Br.-Blk.-Grn.	" " 5%
R41	33KΩ	½	RC33302	BTS-33K	Or.-Or.-Or.	Peaking Coil Shunt
R42	6800Ω	½	RC36801	BTS-6800	Blue-Gray-Red	Video Amp. Plate
R43	1 Meg.	½	RC31004	BTS-1 Meg.	Br.-Blk.-Grn.	Sync. Sep. Grid
R44	6800Ω	½	RC36801	BTS-6800-5%	Blue-Gray-Red	Sync. Sep. Cathode 5%
R45	220KΩ	½	RC32203	BTS-220K	Red-Red-Yl.	Sync. Sep. Plate 10%
R46	180KΩ	½	RC31803	BTS-180K	Br.-Gray-Yl.	Phase Correction
R47	470KΩ	½	RC34703	BTS-470K	Yl.-Vi.-Yl.	Sound IF Grid
R48	470Ω	½	RC34700	BTS-470	Yl.-Vi.-Br.	Sound IF Plate Decoupling
R49	100KΩ	½	RC31003	BTS-100K	Br.-Blk.-Yl.	Sound IF Screen Decoupling
R50	47KΩ	½	RC34703	BTS-47K	Yl.-Vi.-Or.	De-emphasis
R51	6800Ω	½	RC36801	BTS-6800-5%	Blue-Gray-Red	Ratio Det. Diode Load 5%
R52	6800Ω	½	RC36801	BTS-6800-5%	Blue-Gray-Red	" " "
R53	10 Meg.	½	RC31006	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid
R54	390KΩ	½	RC33903	BTS-390K	Or.-White-Yl.	AF Plate
R55	6.8 Meg.	½	RC36804	BTS-6.8 Meg.	Blue-Gray-Grn.	Bias Network
R56	470KΩ	½	RC34703	BTS-470K	Yl.-Vi.-Yl.	Output Grid
R57	68Ω	½	RC10680A	BW-½-68	Blue-Gray-Blk.	Output Cathode 10%
R58	470Ω	½	RC34701	BTS-4700	Yl.-Vi.-Red	Filter
R59	4700Ω	½	RC34701	BTS-4700	Yl.-Vi.-Red	Integrater Network
R60	4700Ω	½	RC34701	BTS-4700	Yl.-Vi.-Red	" "
R61	560Ω	½	RC35600	BTS-560	Grn.-Blue-Br.	Voltage Divider
R62	560Ω	½	RC35600	BTS-560	Grn.-Blue-Br.	" "
R63	1000Ω	½	RC31001	BTS-1000	Br.-Blk.-Red	Vert. Mult. Cathode
R64	100KΩ	1	RC41003	BTA-100K	Br.-Blk.-Yl.	Vert. Mult. Plate
R65	5.6 Meg.	½	RC35604	BTS-5.6 Meg.	Grn.-Blue-Grn.	" " "
R66	390KΩ	½	RC33903	BTS-390K	Or.-White-Yl.	Vert. Mult. Grid
R67	5.6 Meg.	½	RC35604	BTS-5.6 Meg.	Grn.-Blue-Grn.	Feedback Network
R68	4.7 Meg.	½	RC14704	BTS-4.7 Meg.	Yl.-Vi.-Grn.	Vert. Output Grid
R69	18KΩ	½	RC31802A	BTS-18K	Br.-Gray-Or.	Vert. Output Cathode
R70	150KΩ	½	RC31503	BTS-150K	Br.-Grn.-Yl.	Vert. Output Grid
R71	2.2 Meg.	½	RC32204	BTS-2.2 Meg.	Red-Red-Grn.	Voltage Divider
R72	820KΩ	1	RC48203	BTA-820K	Gray-Red-Yl.	Vert. Output Plate
R73	820KΩ	1	RC48203	BTA-820K	Gray-Red-Yl.	" " "
R74	5.6 Meg.	½	RC35604	BTA-5.6 Meg.	Grn.-Blue-Grn.	Vert. Deflection Load
R75	5.6 Meg.	½	RC35604	BTA-5.6 Meg.	Grn.-Blue-Grn.	" " "
R76	4.7 Meg.	½	RC14704	BTA-4.7 Meg.	Yl.-Vi.-Grn.	Horiz. Deflection Load
R77	4.7 Meg.	½	RC14704	BTA-4.7 Meg.	Yl.-Vi.-Grn.	" " "
R78	47002	½	RC34701	BTS-4700	Yl.-Vi.-Red	Horiz. Mult. Grid
R79	1000Ω	½	RC31001	BTS-1000	Br.-Blk.-Red	Horiz. Mult. Cathode
R80	100KΩ	1	RC41003	BTA-100K	Br.-Blk.-Yl.	Horiz. Mult. Plate
R81	220KΩ	½	RC33203	BTS-220K	Red-Red-Yl.	Horiz. Mult. Grid
R82	1.2 Meg.	½	RC31204	BTS-1.2 Meg.	Br.-Red-Grn.	Horiz. Mult. Plate
R83	4.7 Meg.	½	RC14704	BTS-4.7 Meg.	Yl.-Vi.-Grn.	Horiz. Output Grid
R84	4.7 Meg.	½	RC14704	BTS-4.7 Meg.	Yl.-Vi.-Grn.	" " "
R85	47KΩ	1	RC44702	BTA-47K	Yl.-Vi.-Or.	Horiz. Output Plate
R86	47KΩ	1	RC44702	BTA-47K	Yl.-Vi.-Or.	Horiz. Output Plate
R87	150KΩ	½	RC31503	BTS-150K	Br.-Grn.-Yl.	Picture Tube Cathode
R88	47002	½	RC34701	BTS-4700	Yl.-Vi.-Red	Voltage Divider
R89	68Ω	½	RC10680A		Blue-Gray-Blk.	Parasitic Suppressor
R90	68Ω	½	RC10680A		Blue-Gray-Blk.	Parasitic Suppressor
R91	100Ω	½	RC31000		Br.-Blk.-Br.	" "
R92	82002	2	RC58201	BT-2-8200	Gray-Red-Red	HV Osc. Grid
R93	1 Meg.	½	RC31004	BTS-1 Meg.	Br.-Blk.-Grn.	Voltage Divider
R94	3.3 Meg.	½	RC33304		Or.-Or.-Grn.	" "
R95	3.9 Meg.	½	RC43904		Or.-White-Grn.	" "
R96	3.9 Meg.	1	RC43904		Or.-White-Grn.	" "
R97	4.7 Meg.	1	RC44704		Yl.-Vi.-Grn.	" "
R98	4.7 Meg.	1	RC44704		Yl.-Vi.-Grn.	" "
R99	3.3 Meg.	½	RC43304		Or.-Or.-Grn.	" "
R100	3.3 Meg.	1	RC43304		Or.-Or.-Grn.	" "
R101	3.3 Meg.	½	RC33304	BTS-3.3 Meg.	Or.-Or.-Grn.	" "
R102	3.3 Meg.	½	RC33304	BTS-3.3 Meg.	Or.-Or.-Grn.	" "
R103	10Ω	20 #	RC10010	DG-150		Line Dropping
R104A	100Ω	5	RW61000 *	AS-100 #		" "
B	100Ω	5				Line Dropping
R105	1000Ω	2	RC51001	BT-2-1000	Br.-Blk.-Red	Filter
R106	1200Ω	1	RC41201	BTA-1200	Br.-Red-Red	"
R107	18Ω	2	RC50180		Br.-Gray-Blk.	Surge Limiter
R108	150Ω	½	RC31500	BW-½-150	Br.-Grn.-Br.	Filter
R109	15KΩ	2	RC51502	BT-2-15K	Br.-Grn.-Or.	"
R110	10KΩ	1		BTA-10K	Br.-Blk.-Or.	"
R111	100KΩ	1	RC41003	BTA-100K	Br.-Blk.-Yl.	HV Filter

* Item R104A and R104B are connected in parallel.
# Replaces items R104A and R104B.

TRANSFORMER (FILAMENT)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA CHICAGO PART No.	REPLACEMENT DATA MERIT PART No.
T1	117VAC	6.5VAC .05A	@ .6A		TP10002	P-6134 *	T21F08	P-2944 *

* Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA CHICAGO PART No.	REPLACEMENT DATA MERIT PART No.	INSTALLATION NOTES
T2	25002	3.3Ω	170Ω	.6Ω	TO10004A	A-3876	RO-2	A-2928	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA CHICAGO PART No.	REPLACEMENT DATA MERIT PART No.	NOTES
T3	33Ω	650Ω SEC. 2 2.4Ω SEC. 3 .02	TRF10023				

SPEAKER

ITEM No.	RATING FIELD RES.	RATING V. C. IMP.	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	PM	3.3Ω	SR10014B	ST-105 MOD. PS-X	SA07	* Drill and tap magnet frame.
	CONE DIA.	V. C. DIA.				
SP2	4 3/4"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE @ CURRENT 1000 (M)	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA CHICAGO PART No.	REPLACEMENT DATA MERIT PART No.	INSTALLATION NOTES
L1	.051A	70Ω	4H	LG10007	C-2304	R-650*	C-2991*	* Drill new mounting holes.

MECK MODEL XA-701

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

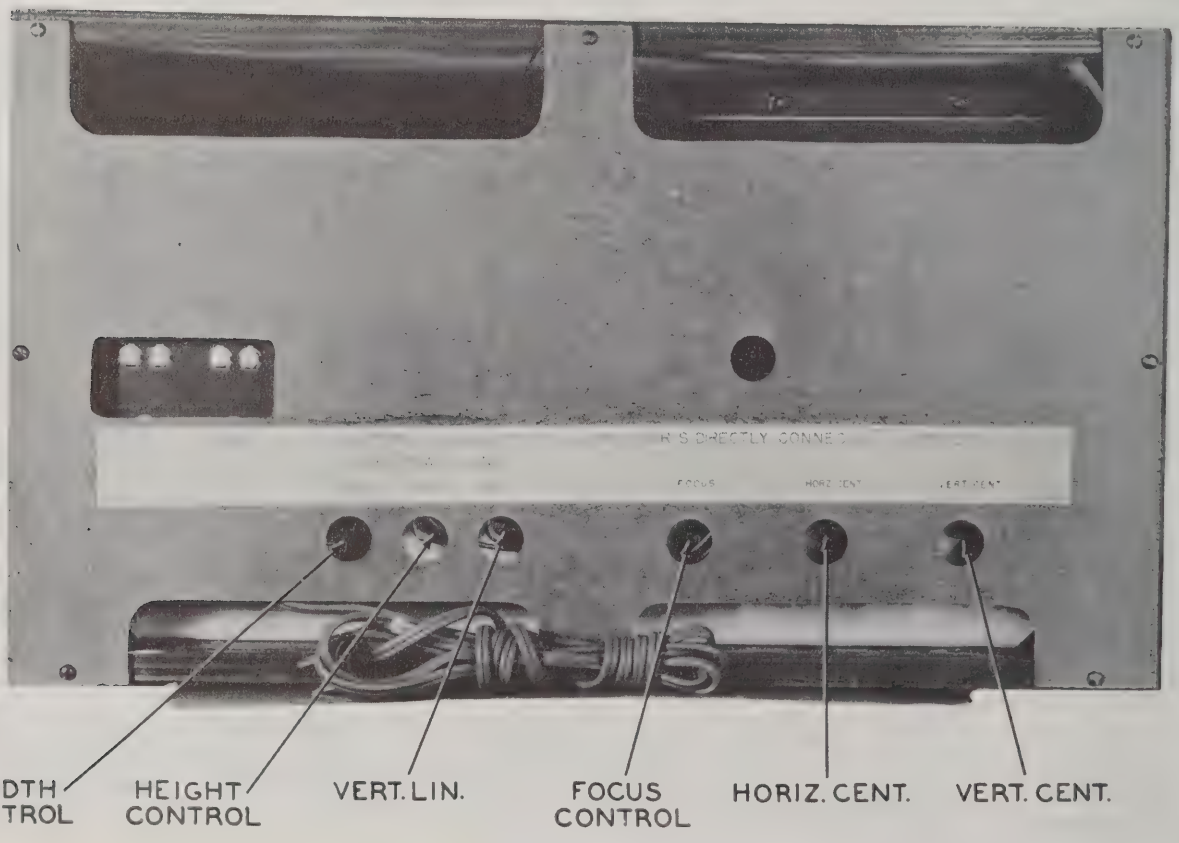
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MECK PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L2	Ant. Coil	0Ω				Part of Tuner Assembly Part#TT10001
L3	Ant. Coil	0Ω				" " " " " "
L4	Ant. Input	2Ω CT				" " " " " "
L5	1st Video IF	.1Ω		TS10030		
L6	2nd Video IF	.1Ω		TS10030		
L7	3rd Video IF	.1Ω	.2Ω	TS10032		
L8	4th Video IF	.1Ω	.2Ω	TS10032		170 Microhenry Coil, wound on 33KΩ resistor.
L9	Peaking	8.5Ω		LG10008		Inductance-410 Microhenries
L10	Peaking	17Ω		LG10010		Primary Inductance-250 Microhenries.
L11	Sound Trap	11Ω	1Ω	TS10038		
L12	Peaking	14Ω		LG10011A		340 Microhenry Coil, wound on 15KΩ resistor
L13	Ratio Det.	4Ω	.1Ω	TS10034B		
L14	Fil. Choke	0Ω				Part of tuner assembly part #TT10001
L15	Fil. Choke	0Ω		LG10012		Inducatnce-24 Microhenries
L16	Fil. Choke	0Ω		LG10012		" " "

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA MECK PART No.			NOTES
M1	.145A	RS10002			

MISCELLANEOUS

ITEM No.	PART NAME	MECK PART No.	NOTES
M2	Tuner Assembly	TT10001	Sarkes Tarzian Part #V-5941 Alligned
M3	Terminal Strip	XTP10022	Antenna
M4	Socket		Picture Tube-Franklin #40-23, Radial Leads Less mounting spring
	Picture Window	DW10006A	
	Knobs	K10066	2-Concentric Shaft type (outer)
	Knobs	K10067	1-single shaft type(dummy)
	Knobs	K10068	2-concentric shaft type(inner)
	Knobs	K10069	1- " " "
	Knobs	K10070	1-concentric shaft type (outer)
	Escutcheon Plate	N10007A	Tuner
	Cabinet	SW10033B	Wood cabinet
	Variable Ceramic Capacitor	CT10003	1.5-7MF

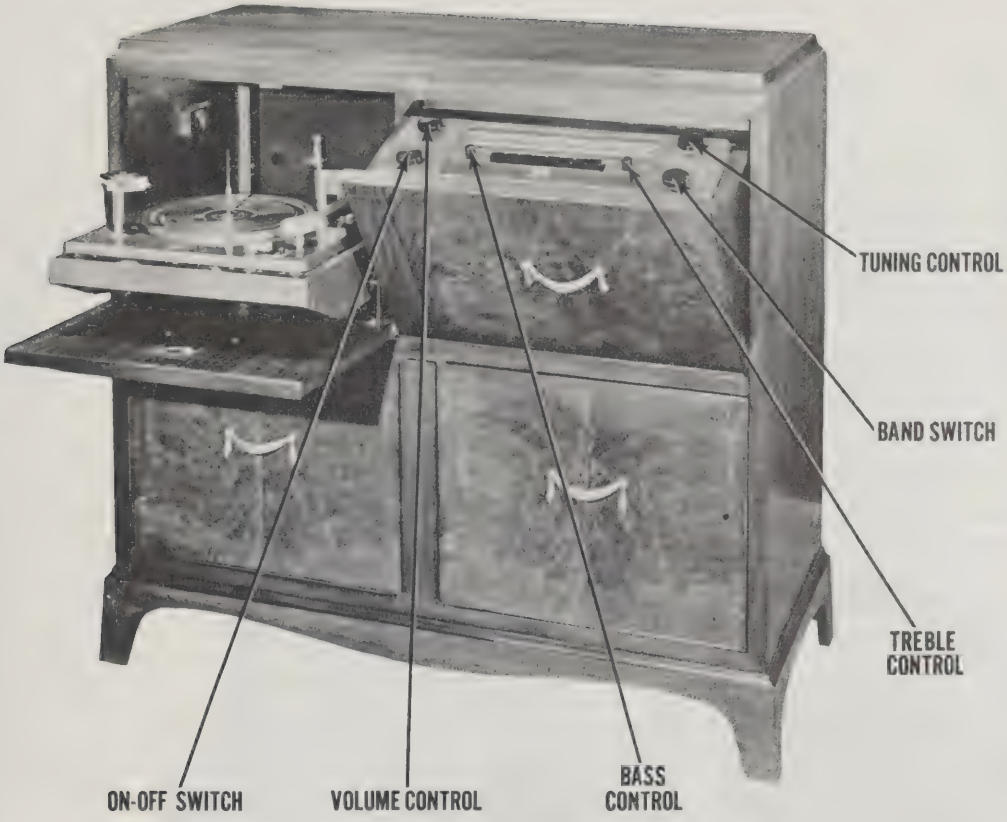


CABINET-REAR VIEW

PHOTOFACT* Folder

*TRADE MARK

RCA VICTOR MODEL 8V151 (Ch. RK-121C, RS-123D)



RCA VICTOR MODEL 8V151 (Ch. RK-121C, RS-123D)

RCA VICTOR MODEL 8V151

TRADE NAME	RCA Victor, Model 8V151 (Ch. RK-121C, RS-123D)
MANUFACTURER	RCA Victor Div., Radio Corp. of America, Camden, New Jersey
TYPE SET	AC Operated Combination Phono-Radio, 2 Band AM-FM Superheterodyne Receiver with Loop Antenna.
TUBES(FIFTEEN)	Types 6BA6 RF Amp., 6BE6 Oscillator, 6BA6 Mixer, 6BA6 1st IF Amp., 6AU6 FM 2nd IF-Phono Amp., 6AU6 FM 3rd IF, 6AL5 FM Detector, 6AT6 AM DET-AVC-AF, 6BA6 Reactance Amp., 6BA6 1st Scratch Eliminator Amp., 6BF6 2nd Scratch Eliminator Amp., 6SN7GT AF-Phase Inv., (2) 6F6G Power Output, 5U4G Rectifier.
POWER SUPPLY	110-120 Volts AC RATING 1.24 Amp., @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC SHORT WAVE 9.2-16.0MC FREQ. MOD. 88-108MC

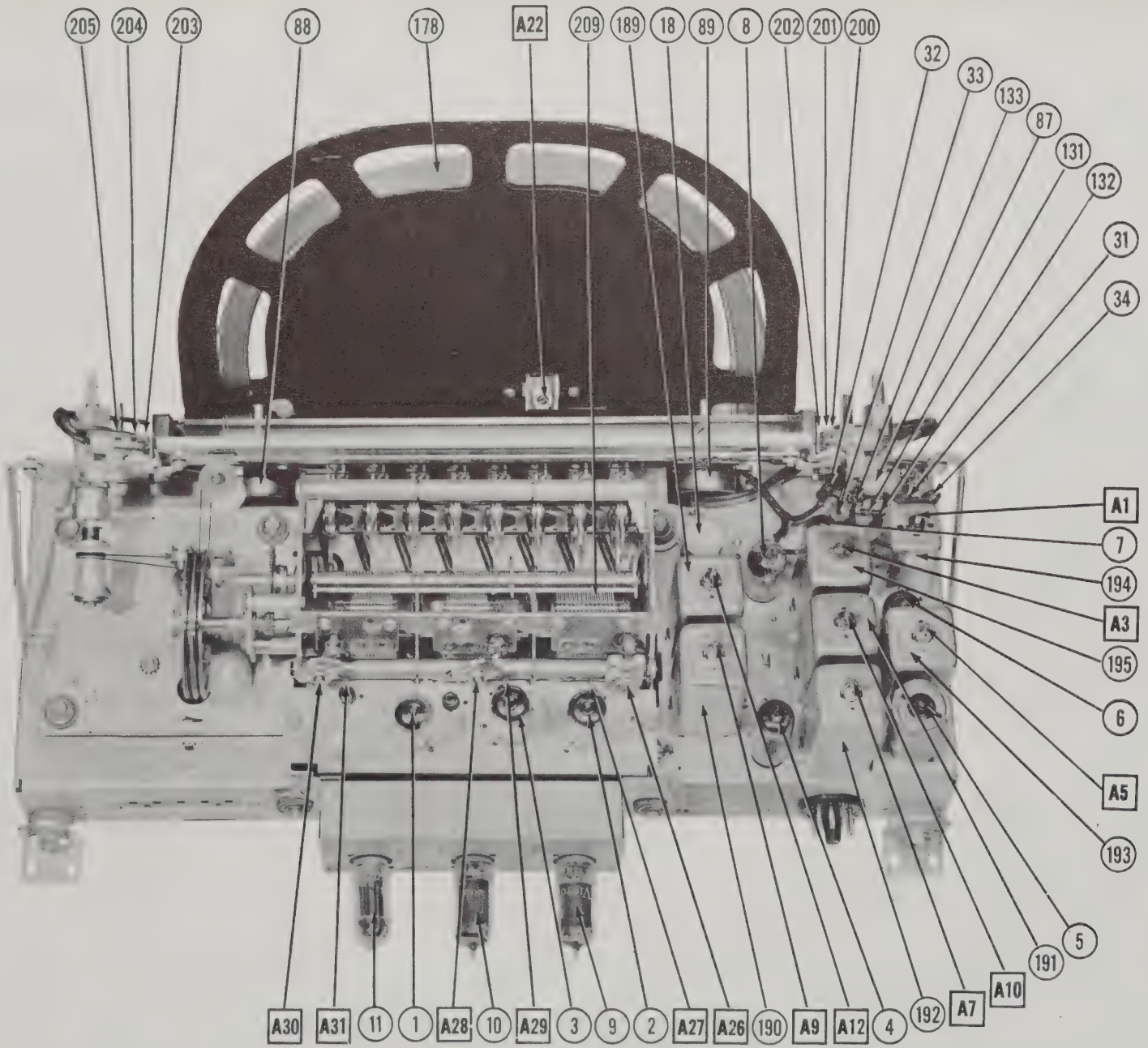
PUSHBUTTON ADJUSTMENT

1. Turn receiver on and allow it to warm up for at least 15 minutes.
2. Remove pushbuttons by pulling out.
3. Loosen set screws for each button.
4. Manually tune in station desired to be set up. Hold manual control firmly and push in any button completely.
5. Tighten set screw firmly.
6. Check accuracy of setting by detuning station with manual control and retuning with pushbutton. If setting is off repeat steps 4, 5, & 6.
7. To set up the remaining buttons follow the same procedure outlined above.

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-17 SET #61 FOLDER 17


205
204
203
88
178
A22
209
189
18
89
8
202
201
200
32
33
133
87
131
132
31
34
A1
7
194
A3
195
6
A5
193
5
191
A10
A7
192
4
A12
A9
190
A26
A27
2
9
3
A29
10
A28
1
11
A31
A30

114
A11
110
67
55
54
A4
45
198
109
20
53
118
117
122
119
121
120
51
52
48
49
A
47
73
21
19
123
207
124
50
197
136
135
125
138
66
139
28
116
29
129
30
137
A13
130
99
115
A20
112
A14
105
A17
104
A23
199
A21
A15
79
A24
A18
A16
A19
A25
B
A6
56
108
58
57
59
107
162
44
128
A8
43
159
60
42
160
86
161
134
111
127
41
126
113
64
106
75
46
92
81
186
187
85
97
163
208
184
90
180
179
183
94

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
1	RF Amp.	6BA6	6BA6	7BK	
2	Oscillator	6BE6	6BE6	7CH	
3	Mixer	6BA6	6BA6	7BK	
4	1st IF	6BA6	6BA6	7BK	
5	FM 2nd IF-Phono Amp.	6AU6	6AU6	7BK	
6	FM 3rd IF	6AU6	6AU6	7BK	
7	FM DET.	6AL5	6AL5	6BT	
8	AM DET-AVC-AF	6AT6	6AT6	7BT	
9	Reactance Amp.	6BA6	6BA6	7BK	
10	1st Scratch Eliminator Amp.	6BA6	6BA6	7BK	
11	2nd Scratch Eliminator Amp.	6BF6	6BF6	7BT	
12	AF-Phase Inv.	6SN7GT	6SN7GT	8BD	
13	Power Output	6F6G	6F6G	7S	
14	Power Output	6F6G	6F6G	7S	
15	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
16A	30	450	72955	AF88J	UP4445		DY314	D5172	◓ Filter
B	50	450		PRS25/50	BR502				■ Filter
C	40	25							Bias Filter
17	16	150	31323	PRS150-16	BR1615		M-16-150	UT-161	Filter
18	15	300	32223	AF3G	UP1535		DY-20-350	EL-203	Decoupling
19	5	50	72121	PRS150/4	BR550		M-4-450	TA-55	Stabilizing Cap.
20	5	50	72121	PRS150/4	BR550		M-4-450	TA-55	3rd IF Grid Filter
21	.01	500	71588	684-01	GT6S1	GP2-325-01	MPH-6-01	TC-11	Line Filter
22	.0035	1000	70646	1084-003	GT16D3		STM-16-003	TR-23	Output Plate Bypass
23	.0035	1000	70646	1084-003	GT16D3		STM-16-003	TR-23	" " "
24	.01	600	70631	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	Audio Coupling
25	.01	600	70631	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	" "
26	.0035	1000	72596	1084-003	GT16D3		STM-16-003	TR-23	" ". Note 1
27	.02	600	70632	684-02	GT6S2		ST-6-02	TC-12	" "
28	.01	400	72827	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Tone Compensation.
29	.0012	400	72117	484-001	GT6D1	GP2L-0015	ST-6-001	TC-21	" "
30	.005	400	72791	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	" "
31	.01	200	71923	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	Audio Coupling
32	.003	200	71921	484-003	GT6D3	GP2M-003	ST-6-003	TC-23	" "
33	.025	200	70612	484-025	GT4S25		ST-6-03	TC-13	Tone Comp.
34	.015	200	72120	484-015	GT6S15		ST-4-02	TC-12	" "
35	.01	400	72827	484-01	GT4S1	GP2-335-01	ST-4-01	TC-1	Audio Coupling
36	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	Bias Filter
37	.05	200	72596	484-05	GT2S5		ST-4-05	TC-15	" "
38	.01	400	72827	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	" " Note 2
39	.002	400	71927	484-002	GT6D2	GP2M-002	ST-6-002	TC-22	Audio Coupling
40	.01	200	71923	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	Bias Filter
41	.05	400	72791	484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
42	.05	200	72596	484-05	GT2S5		ST-4-05	TC-15	Phono Coupling
43	.005	200	72596	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	Tone Comp.
44	.05	200	72596	484-05	GT2S5		ST-4-05	TC-15	Bias Filter
45	.01	600	70631	684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	RF Bypass Pwr. Supply
46	.003	200	71921	484-003	GT6D3	GP2M-003	ST-6-003	TC-23	AVC Filter
47	.05	200	72596	484-05	GT2S5		ST-4-05	TC-15	RF Bypass
48	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	Diode Load Cap Note 3
49	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	" " " " "
50	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	De-emphasis
51	.005	400	72791	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	3rd IF Plate Decoup.
52	.005	400	72791	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	3rd IF Screen Bypass
53	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	3rd IF Grid Filter
54	.005	400	72791	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	2nd IF Plate Decoup.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
105	100Ω	½			Br.-Blk.-Br. Decoupling
106	22 Meg.	½		BTS-22 Meg.	Red-Red-Blue Bias
107	100Ω	½			Br.-Blk.-Br. 1st IF Cathode
108	1000Ω	½		BTS-1000	Br.-Blk.-Red 1st IF Screen
109	2200Ω	½		BTS-2200	Red-Red-Red 1st IF Plate Decoup.
110	22KΩ	½		BTS-22K	Red-Red-Or. Diode Filter
111	82KΩ	½		BTS-82K	Gray-Red-Or. Diode Load
112	180KΩ	½		BTS-180K	Br.-Gray-Yl. " "
113	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Net.
114	15KΩ	½		BTS-15K	Br.-Grn.-Or. 2nd IF Grid
115	39KΩ	½		BTS-39K	Or.-White-Or. 2nd IF Screen
116	22KΩ	½		BTS-22K	Red-Red-Or. Decoupling
117	2200Ω	½		BTS-2200	Red-Red-Red 2nd IF Plate Decoup.
118	15KΩ	½		BTS-15K	Br.-Grn.-Or. 3rd IF Grid
119	22KΩ	1		BTA-22K	Red-Red-Or. 3rd IF Screen
120	1000Ω	½		BTS-1000	Br.-Blk.-Red 3rd IF Plate Decoup.
121	1000Ω	½		BTS-1000	Br.-Blk.-Red 3rd IF Decoup.
122	15KΩ	½		BTS-15K	Br.-Grn.-Or. De-emphasis
123	22KΩ	½		BTS-22K	Red-Red-Or. Ratio Det. Diode Load
124	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AVC Net.
125	220KΩ	½		BTS-220K	Red-Red-Yl. Tone Comp.
126	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Aux. Jack Shunt
127	180KΩ	½		BTS-180K	Br.-Gray-Yl. Phono Shunt
128	22KΩ	½		BTS-22K	Red-Red-Or. Tone Comp.
129	270Ω	½		BW-½-270	Red-Vi.-Br. Isolation
130	270KΩ	½		BTS-270K	Red-Vi.-Yl. Tone Comp.
131	15KΩ	½		BTS-15K	Br.-Grn.-Or. " "
132	27KΩ	½		BTS-27K	Red-Vi.-Or. " "
133	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. Volume Control Shunt
134	820KΩ	½		BTS-820K	Gray-Red-Yl. Tone Comp.
135	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. 1st AF Grid
136	68KΩ	½		BTS-68K	Blue-Gray-Or. Tone Comp.
137	180KΩ	½		BTS-180K	Br.-Gray-Yl. 1st AF Plate Load
138	100KΩ	½		BTS-100K	Br.-Blk.-Yl. Tone Comp.
139	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
140	330KΩ	½		BTS-330K	Or.-Or.-Yl. 1st Scratch Eliminator Amp. Grid
141	8200Ω	½		BTS-8200	Gray-Red-Red 1st Scratch Eliminator Amp. Cathode
142	180KΩ	½		BTS-180K	Br.-Gray-Yl. 1st Scratch Eliminator Amp. Screen Drop.
143	82KΩ	½		BTS-82K	Gray-Red-Or. 1st Scratch Eliminator Amp. Screen Bleeder
144	100KΩ	½		BTS-100K	Br.-Blk.-Yl. 1st Scratch Eliminator Amp. Plate Load
145	330KΩ	½		BTS-330K	Or.-Or.-Yl. 2nd Scratch Eliminator Amp. Grid
146	4700Ω	½		BTS-4700	Yl.-Vi.-Red 2nd Scratch Eliminator Amp. Cathode
147	100KΩ	½		BTS-100K	Br.-Blk.-Yl. 2nd Scratch Eliminator Amp. Plate Load
148	820KΩ	½		BTS-820K	Gray-Red-Yl. Eliminator Amp. Rect. Load
149	220KΩ	½		BTS-220K	Red-Red-Yl. Bias Net.
150	220KΩ	½		BTS-220K	Red-Red-Yl. " "
151	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. " "
152	330KΩ	½		BTS-330K	Or.-Or.-Yl. " "
153	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. " "
154	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Scratch Eliminator Reactance Grid
155	100KΩ	1		BTA-100K	Br.-Blk.-Yl. Scratch Eliminator Reactance Screen Drop.
156	12KΩ	½		BTS-12K	Br.-Red-Or. Scratch Eliminator Reactance Screen Bleeder
157	220KΩ	½		BTS-220K	Red-Red-Yl. Scratch Eliminator Reactance Plate Load
158	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. Tone Comp.
159	470KΩ	½		BTS-470K	Yl.-Vi.-Yl. 2nd IF Bias
160	180KΩ	½		BTS-180K	Br.-Gray-Yl. Bias Net.
161	100KΩ	½		BTS-100K	Br.-Blk.-Yl. " "
162	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. " "
163	3Ω	½	72323	BW-1-2.7	Or.-Blk.-Gold Series Dial Lights
164	1 Meg.	1		BTA-1 Meg.	Br.-Blk.-Grn. 2nd AF Grid
165	2700Ω	½		BTS-2700	Red-Vi.-Red 2nd AF Cathode
166	47KΩ	½		BTS-47K	Yl.-Vi.-Or. 2nd AF Plate Load
167	220KΩ	½		BTS-220K	Red-Red-Yl. Phase Inv. Grid
168	2700Ω	½		BTS-2700	Red-Vi.-Red Phase Inv. Cathode
169	22KΩ	½		BTS-22K	Red-Red-Or. " " "
170	27KΩ	½		BTS-27K	Red-Vi.-Or. Phase Inv. Plate Load
171	220KΩ	½		BTS-220K	Red-Red-Yl. Output Grid
172	220KΩ	½		BTS-220K	Red-Red-Yl. " "
173A	2760Ω	10	71660		Voltage Divider
B	2520Ω	4			" "
C	180Ω	3.5			" "

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA RCA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
55	.002	400	71927	484-002	UT2D2	GP2M-002	ST-6-002	TC-22	2nd IF Screen Bypass
56	.005	400	72751	484-005	UT2D5	GP2M-005	ST-6-005	TC-25	1st IF Plate Decoup.
57	.005	200	71926	484-005	UT2D5	GP2M-005	ST-6-005	TC-25	1st IF Screen Bypass
58	.005	200	71926	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	RF Bypass Power Supply
59	.05	400	72696	484-05	GT2S5		ST-4-05	TC-15	AVC Filter
60	.01	400	72827	484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Mixer Plate Decoup.
61	.003	200	71921	484-003	GT6D3	GP2M-003	ST-6-003	TC-23	Mixer Screen Bypass
62	.003	200	71921	484-003	GT6D3	GP2M-003	ST-6-003	TC-23	Mixer Cath. Bypass
63	.005	400	72751	484-005	GT6D5	GP2M-005	ST-6-005	TC-25	Osc. Decoupling.
64	.01	400	71927	484-01	GT4T1	GP2-335-01	ST-4-01	TC-11	Osc. Feedback
65	.002	200	71921	484-002	GT6D2	GP2M-002	ST-6-002	TC-22	RF Screen Bypass
66	.01	200	71923	484-01	GT6D1	GP2-335-01	ST-4-01	TC-11	Filament Bypass
67	.01	200	71923	484-01	GT2S1	GP2-335-01	ST-4-01	TC-11	" "
68	100	300	36896	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Phase Shift Cap.
69	470	500	39644	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	2nd Scratch Eliminator Plate Bypass
70	560	500	39646	1468-0005	5W5T5	GP2K-500	MO.5-36	1FM-35	Audio Coupling
71	470	500	39644	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	1st Scratch Eliminator Plate Bypass
72	330	500	39640	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	Audio Coupling
73	1000	300	71926	1468-001	1W5D1	GP2L-001	MO.3-21	1FM-21	RF Bypass
74	180	500	71933	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Osc. Feedback
75	180	300	71922						Fixed Padder
76	100	300	36896	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Grid Cap.
77	18	500			5W5Q	MP0K-20	MOS.5-42	MS-42	" "
78	6.8	300	39043						Osc. Coupling
79	5.6	300	71936	1469-0000 05	5R5V5		MOS.5-55	MS-55	RF Coupling
80	50	300	71924	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	" "
81	330	300	71919						Fixed Padder
82	270	300	71920	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	RF Coupling
83	220	300	71920	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	" "
84	100	300	36896	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
85	330	300	71918						Fixed Padder
86	100	300	36896	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Filament Bypass

Note 1. Some models use .05 MFD in this application.
Note 2. Some model use .001 MFD in this application.
Note 3. When either item 48 or 49 are replaced, replace both with capacitors of equal value.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
87A	1.5 Meg	*	71596	D18-139XX*	T-95*	Volume control tapped @ 250KΩ and 500KΩ
B	Shaft		Not Req.	A	Not Req.	Attach to 87A Per Instructions
88A	1 Meg.	*	38408	D18-137	T-95-1	HF tone control
B	Shaft		Not Req.	A	Not Req.	Attach to 88A Per Instructions
89A	2 Meg.	*	38411	D18-139	T-95-2	LF tone control
B	Shaft		Not Req.	A	Not Req.	Attach to 89A Per Instructions

* Use original spacer nut between chassis and front panel.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA RCA PART No.	IRC PART No.	IDENTIFICATION CODES	
90	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	FM Ant. Loading
91	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn.	RF Grid
92	22KΩ	½		BTS-22K	Red-Red-Or.	AVC Net.
93	4700Ω	½		BTS-4700	Yl.-Vi.-Red	RF Screen
94	2200Ω	½		BTS-2200	Red-Red-Red	BC RF Coil Shunt
95	3.9 Meg.	½		BTS-3.9 Meg.	Or.-White-Grn.	Mixer Grid
96	2200Ω	½		BTS-2200	Red-Red-Red	Mixer Cathode
97	39Ω	½			Or.-White-Br.	" "
98	27KΩ	½		BTS-27K	Red-Vi.-Or.	Mixer Screen
99	2200Ω	½		BTS-2200	Red-Red-Red	Mixer Plate Decoup.
100	15Ω	½			Br.-Grn.-Blk.	Parasitic Supp.
101	22KΩ	½		BTS-22K	Red-Red-Or.	Osc. Grid
102	10KΩ	1		BTA-10K	Br.-Blk.-Or.	Osc. Screen
103	15KΩ	1		BTA-15K	Br.-Grn.-Or.	Osc. Plate
104	8200Ω	½		BTS-8200	Gray-Red-Red	Osc. Coil Shunt

DATE 5/49 499-17 SET #61 FOLDER 17

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA RCA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
174	117VAC @ 1.24A	735VCT @ .138 AMP	5.2VAC @ 3.0A	6.3VAC @ 5.9A	37048	P-8014	PV-145 †	P-2884 #

RCA original part No. 94161-501
Add series res. to reduce plate voltage.
† Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA RCA PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
175	12KΩ CT	2.3Ω	600Ω CT	.3Ω	71661	A-3856 †	RO-303 †	A-2936 †	RCA original Part No. 940394-1 † Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA RCA PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD V. C. IMP.		ST-868		
176	1000Ω 2.3Ω	92867-2W	M.L. F10-2		
	Cone Dia. V. C. Dia.				
177	11 7/8" 1 3/8"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA PART No.	MEISSNER PART No.
178	AM Loop Ant.	0Ω	.5Ω	71962	
179	Loop Load		.5Ω	71958	
180	SW Ant.	.1Ω	.1Ω	71964	
181	FM Dipole Ant.		0Ω	72555	
182	FM Ant.	0Ω	0Ω	71940	
183	AM RF	42Ω	2.5Ω	71957	
184	SW RF		0Ω	71954	
185	FM RF		0Ω	71938	
186	AM Osc.		.5Ω	71952	
187	SW Osc.		0Ω	71953	
188	FM Osc.		0Ω	71937	
189	AM 1st IF	0Ω	0Ω	71946	
190	FM 1st IF	.1Ω	.3Ω	71945	
191	AM 2nd IF	0Ω	0Ω	71948	
192	FM 2nd IF	.3Ω	.3Ω	71947	
193	FM 3rd IF	.3Ω	.3Ω	71949	
194	FM 4th IF	.3Ω	.3Ω	71948	
195	Ratio Det.		.1Ω	71934	
196	RF Plate Chk.		1Ω	71959	

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA PART No.	MEISSNER PART No.
197	Fil. Choke		.5Ω	71942	
198	Fil. Choke		.5Ω	71942	

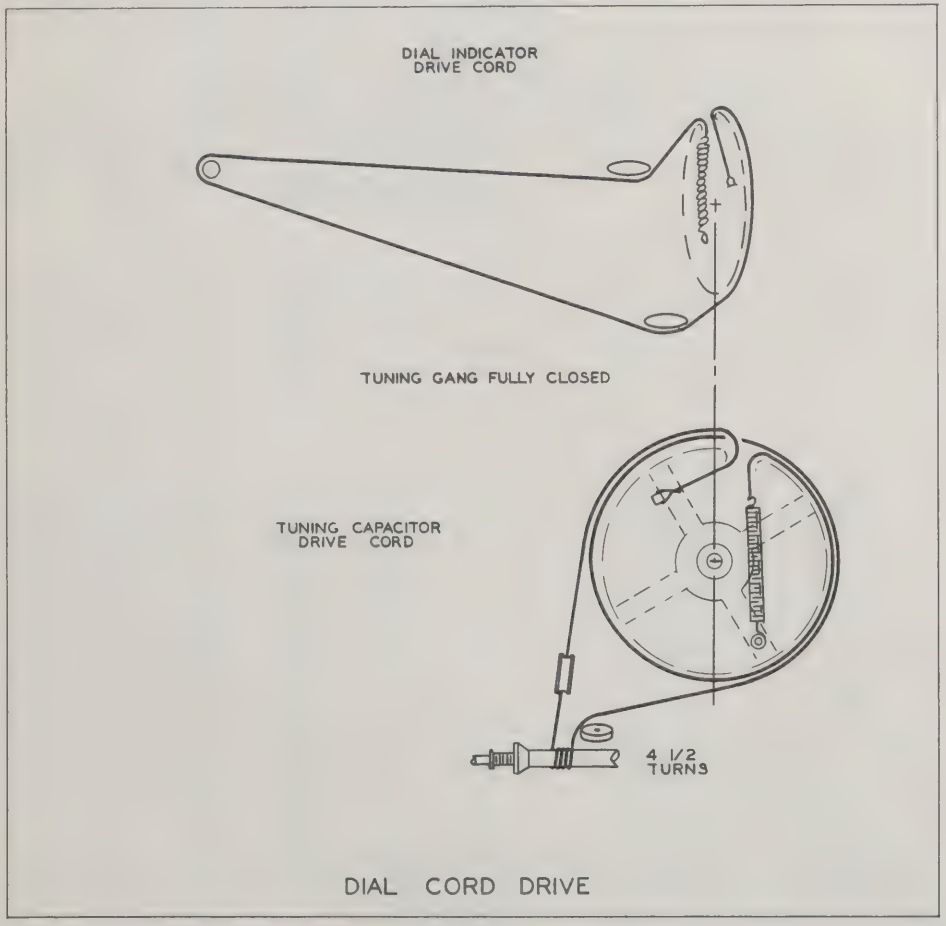
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA RCA PART No.	NOTES
199 to 205	Bayonet	6-8V	0.2A	White	11765	Type #51
206	Bayonet	6-8V	0.25A	Blue	11891	Type #44

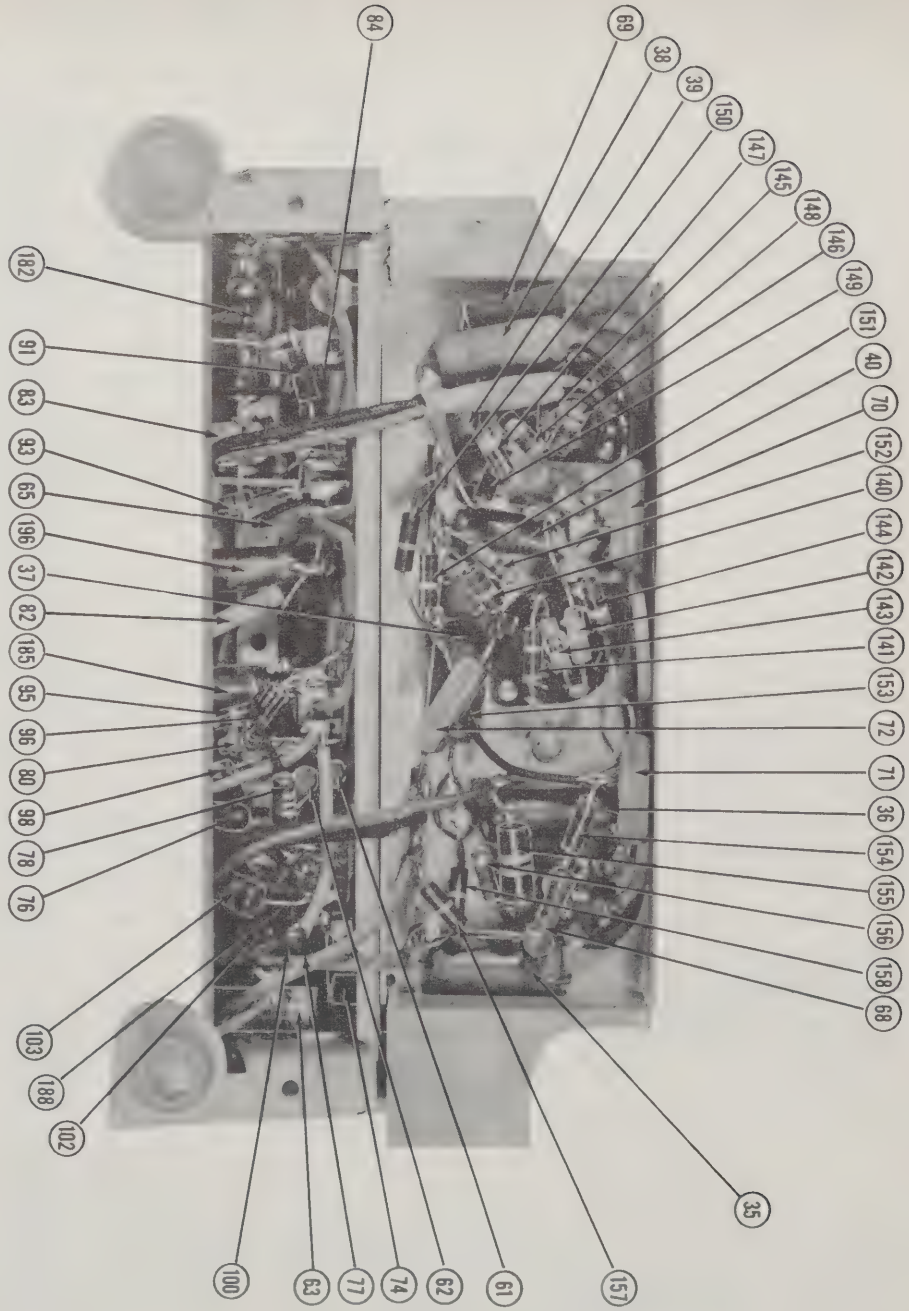
PARTS LIST AND DESCRIPTIONS (Continued)

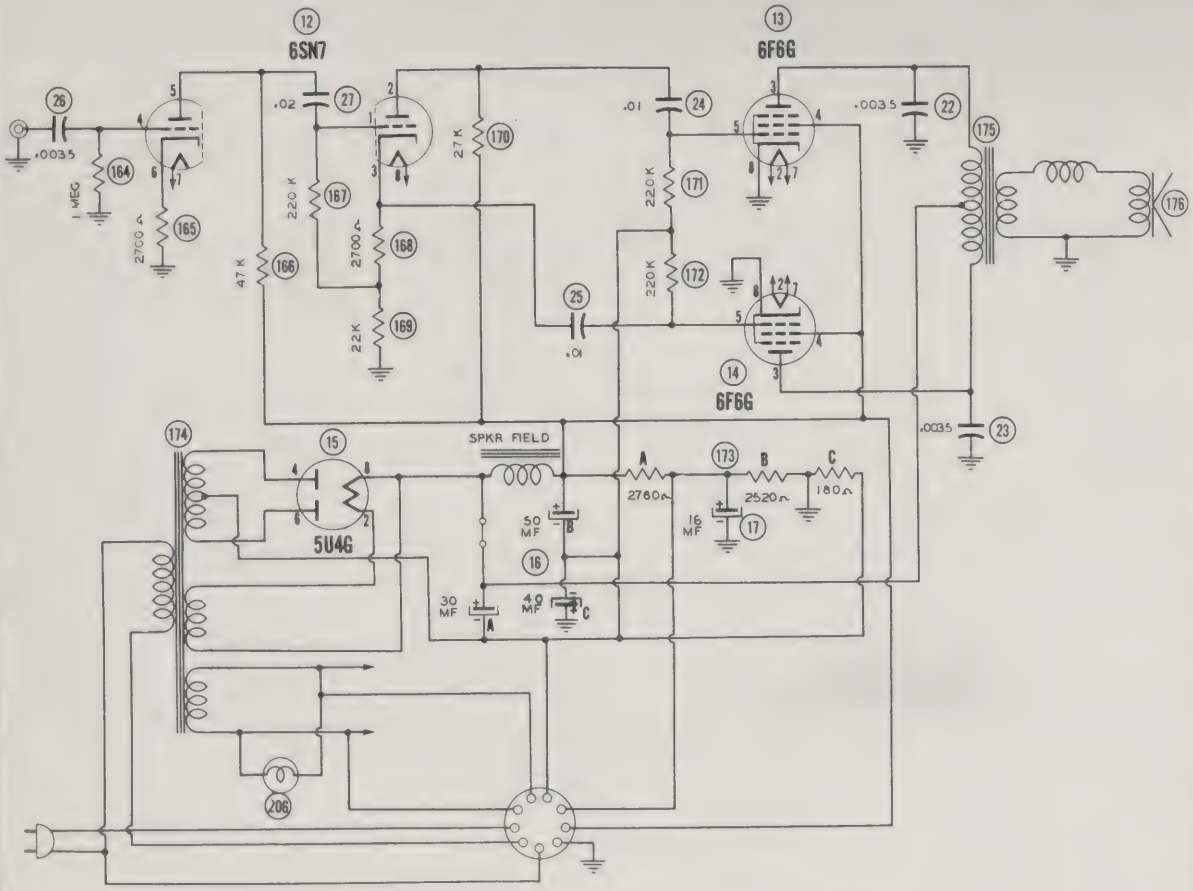
MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
S07	Switch	73658	Power-"MM"
S06	Switch	71802	Band
S09	3 Gang Var. Cap.		(13-360MMF, 13-402MMF, 11-457MMF)
A14	Trimmer	71808	SW Osc. Adj.
A15	Trimmer	71807	SW RF Adj.
A16	Trimmer	71807	SW Ant. Adj.
A20	Trimmer	71809	BC Osc. Adj.
A21	Trimmer	71808	BC RF Adj.
A22	Trimmer	38684	BC Ant. Adj.
A26	Trimmer	71803	FM Osc. Adj.
A28	Trimmer	71804	FM RF Adj.
A30	Trimmer	71804	FM Ant. Adj.
	Dial Scale	71654	Glass FM
	Dial Scale	71653	Glass BC
	Dial Scale	71652	Glass SW
	Dial Pointer	71832	
	Dial Window	71810	



DIAL CORD DRIVE





THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.

RADIO-PHONO SWITCH IN RADIO POSITION.
VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	-.6VDC	0V	0V	6.3VAC	255VDC	95VDC	3V	
2A	6LE6	5.1VDC	0V	0V	6.3VAC	140VDC	115VDC	1.65VDC	
‡ 2B	6BE6	5-8.4VDC	0V	0V	6.3VAC	140VDC	120VDC	135VDC	
3	6BA6	0V	0V	0V	6.3VAC	255VDC	95VDC	8VDC	
4	6BA6	-.6VAC	0V	6.3VAC	0V	255VDC	110VDC	1.0VDC	
‡ 5	6AV6	-.6VDC	0V	6.3VAC	0V	255VDC	145VDC	0V	
‡ 6	6AV6	-.6VDC	0V	6.3VAC	0V	115VDC	125VDC	0V	
‡ 7	6AL5	0V	-.9VDC	6.3VAC	0V	-2.9VDC	0V	.3VDC	
8	6AT6	-.3VDC	0V	6.3VAC	0V	-.8VDC	-.2VDC	115VDC	
* 9	6BA6	-.6VDC	0V	6.3VAC	0V	14.5VDC	85VDC	0V	
* 10	6BA6	0V	0V	6.3VAC	0V	250VDC	7VDC	6.8VDC	
* 11	6BE6	0V	6.3VDC	6.3VAC	0V	0V	-.1VDC	125VDC	
12	6SC7GT	45VDC	210VDC	60VDC	0V	165VDC	6.3VAC	4.2VAC	0V
13	6F6G	0V	0V	380VDC	280VDC	-21.5VDC	60VDC	6.2VAC	0V
14	6F6G	0V	0V	380VDC	280VDC	-21.5VDC	-25VDC	6.2VAC	0V
15	5U4G	0V	385VDC	0V	385VAC	0V	385VAC	0V	380VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6BA6	0.5 Meg.	0Ω	0Ω	.1Ω	5.6KΩ	7KΩ	0Ω	
2A	6LE6	22KΩ	0Ω	0Ω	.1Ω	22KΩ	17KΩ	17KΩ	
‡ 2B	6BE6	22KΩ	0Ω	0Ω	.1Ω	22KΩ	17KΩ	17KΩ	
3	6BA6	0.5 Meg.	0Ω	0Ω	.1Ω	5.6KΩ	7KΩ	0Ω	
4	6BA6	1.4 Meg.	0Ω	.1Ω	0Ω	5.6KΩ	4KΩ	100Ω	
‡ 5	6AV6	220KΩ	0Ω	.1Ω	0Ω	5.6KΩ	6KΩ	0Ω	
‡ 6	6AV6	1MΩ	0Ω	.1Ω	0Ω	7KΩ	23KΩ	0Ω	
‡ 7	6AL5	0Ω	22KΩ	.1Ω	0Ω	Inf.	0Ω	Inf.	
8	6AT6	0.5 Meg.	0Ω	.1Ω	0Ω	1.3Meg.	220KΩ	220KΩ	
* 9	6BA6	0.5 Meg.	0Ω	.1Ω	0Ω	5.6KΩ	10KΩ	0Ω	
* 10	6BA6	0.5 Meg.	0Ω	.1Ω	0Ω	5.6KΩ	9KΩ	9KΩ	
* 11	6BE6	400KΩ	5KΩ	.1Ω	0Ω	0Ω	100KΩ	100KΩ	
12	6SC7GT	33.2KΩ	3.4KΩ	20KΩ	1.1MΩ	53KΩ	5.7KΩ	.1Ω	0Ω
13	6F6G	0Ω	.1Ω	0.5KΩ	5.4KΩ	230KΩ	22KΩ	.1Ω	0Ω
14	6F6G	0Ω	.1Ω	0.5KΩ	5.4KΩ	230KΩ	15KΩ	.1Ω	0Ω
15	5U4G	Inf.	6.2KΩ	Inf.	Inf.	Inf.	190Ω	Inf.	6.2KΩ

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION

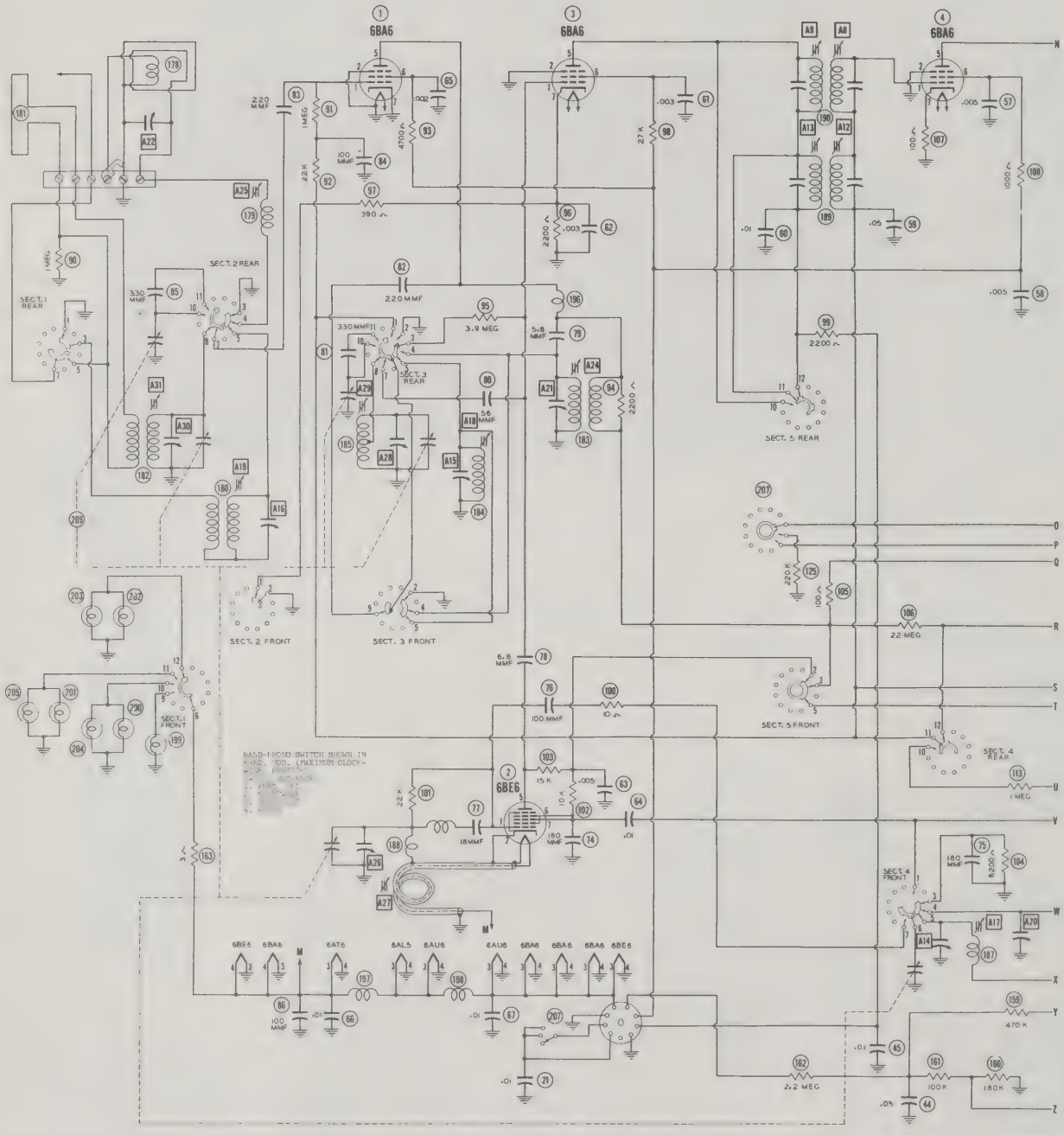
* Taken with power switch in "MM" position. RADIO-PHONO SWITCH IN PHONO POSITION.

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

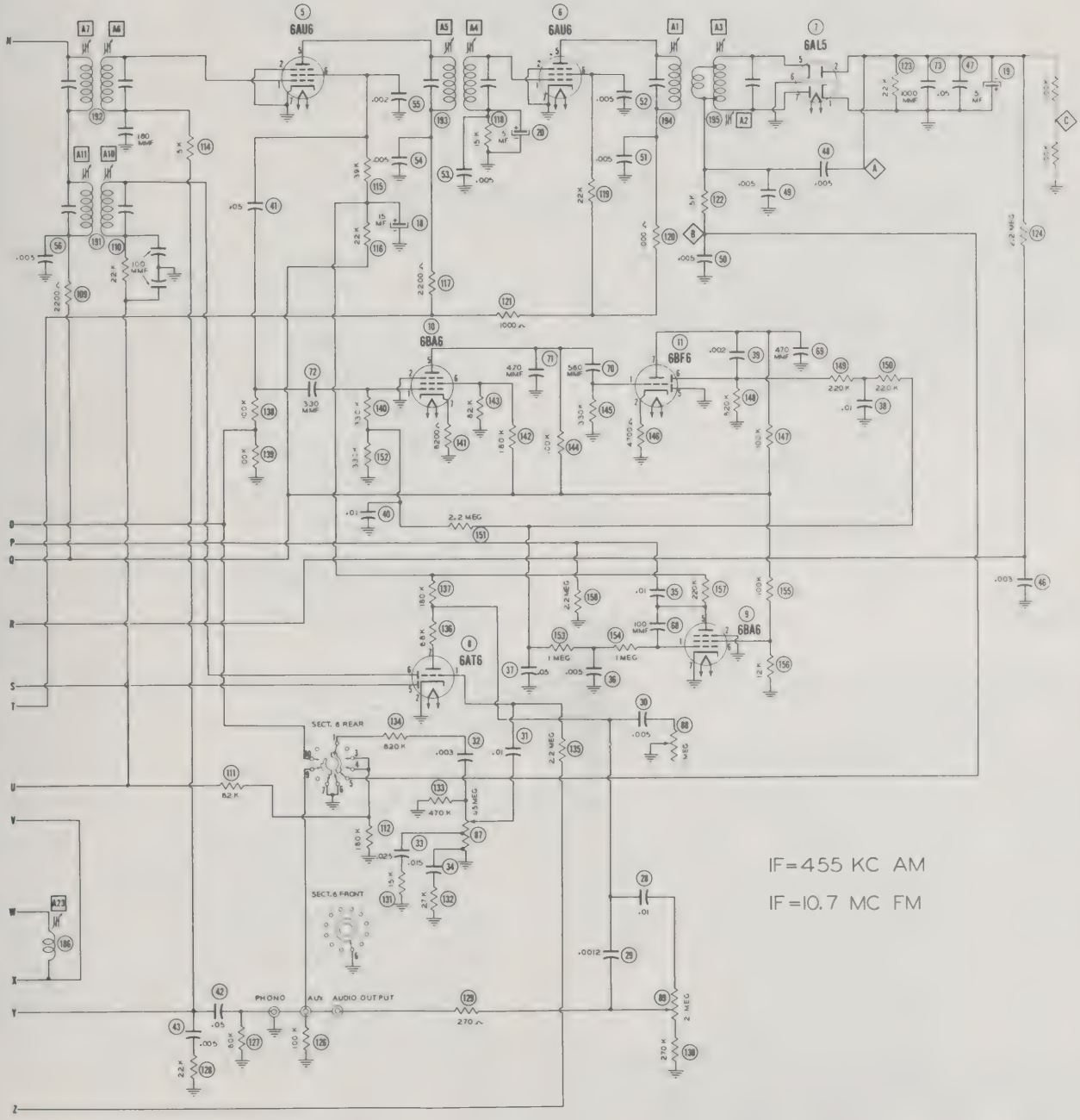
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949



A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949



A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W Sams & Co., Inc. 1949

CRITICAL LEAD DRESS

1. Lead from pin 5 of 6BA6 FM Mixer tube (3) to terminal C on FM 1st IF transformer (190) should be dressed close to chassis.
2. Leads to terminals "C" & "D" on AM 1st IF transformer (189) should be dressed close together.
3. The following capacitors must be dressed close to the chassis with leads kept as short as possible: 60, 59, 53, 51, 47 and 73.
4. Lead from pin 7 of 6AT6 must be dressed away from lead to terminal "D" of Det. Transformer (195).
5. All FM coil connections must be soldered in exact place as were original. (One sixteenth inch difference in length may be excessive.)
6. All wiring is critical as to length and placement. It is therefore important when servicing that extreme care should be taken so as not to disturb more of the wiring than absolutely necessary.
7. Keep tuning capacitor rotor grounding brushes clean and making good contact.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Before starting alignment check lead dress as outlined.
Alignment of FM IF necessitates realignment of AM IF.
To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.
Use insulated alignment screwdriver for all adjustments.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM & OUTPUT METER

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
In step 2 connect two 68KΩ resistors in series from Point A to chassis. (These resistors must be within 1% of each other). The junction of these two resistors is Point C. (See Schematic).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.01MFD	High side to Pin 1 (Grid) 6AU6 3rd IF Tube (6). Low side to chassis.	10.7MC 400∿ amplitude modultion	FM (fully clockwise)	Tuning cap fully closed	DC Probe to Point A. Common to chassis.	A1	Connect 680Ω carbon resistor across terminal D and E of the ratio Det. transformer (195). Adjust A1 for maximum deflection. Remove 680Ω resistor.
2.	.01MFD	"	"	"	"	DC Probe to Point B. Common to Point C. (See Prealignment notes.)	A2, A3	Connect output meter across voice coil. Adjust A2 for zero deflection on VTVM. Adjust A3 for minimum audio output. The zero deflection and minimum audio output should occur at same point. If such is not the case the two cores (A2, A3) should be adjusted until both occur with no further adjustment of either core.
3.	.01MFD	"	"	"	"	DC Probe to Point A. Common to chassis.	A1	Adjust for maximum deflection.
4.	.01MFD	High side to Pin 1 (Grid) 6BA6 Mixer Tube (3). Low side to chassis.	"	"	"	"	A4, A5	Shunt 680Ω carbon resistor across primary of FM 3rd IF transformer (193). Adjust A4 for maximum deflection. Transfer shunt to secondary and adjust A5 for maximum deflection.
5.	.01MFD	"	"	"	"	"	A6, A7	Transfer shunt of previous step to primary of FM 2nd IF transformer (192). Adjust A6 for maximum deflection. Transfer shunt to secondary and adjust A7 for maximum deflection.
6.	.01MFD	"	"	"	"	"	A8, A9	Transfer shunt of previous step to primary of FM 1st IF transformer (190) and adjust A8 for maximum deflection. Transfer shunt to secondary and adjust A9 for maximum deflection. Remove 680Ω shunt. Continue with AM alignment step 7.

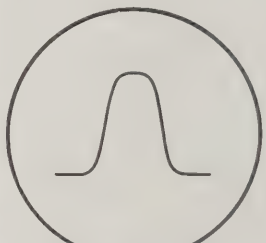


FIG. 1

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
1.	.01MFD	High side to Pin 1 (Grid) 6AU6 FM 2nd IF Tube (5). Low side to chassis.	10.7MC (Freq. mod)	FM (fully clockwise)	Tuning cap fully closed	Vertical input to Point A. Ground to chassis.	A1, A4 A5	Disconnect 5MFD cap from Point A. Adjust A1, A4, A5 for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
2.	.01MFD	High side to Pin 1 (Grid) 6BA6 FM 1st IF Tube (4). Low side to chassis.	"	"	"	"	A6, A7	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1.
3.	.01MFD	High side to Pin 1 (Grid) 6BA6 FM Mixer Tube (3). Low side to chassis.	"	"	"	"	A8, A9	Adjust for maximum amplitude, symmetry and coincidence of pattern per Fig. 1. Reconnect 5MFD cap to Point A.
4.	.01MFD	High side to Pin 1 (Grid) 6BA6 FM 1st IF Tube (4). Low side to chassis.	"	"	"	Vertical input to Point B. Ground to chassis.	A2, A3	Alternately adjust A2, A3 for maximum straightness of crossover lines with crossover occuring at center of pattern per Fig. 2. Continue with AM alignment step 7.

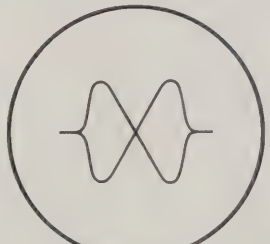


FIG. 2

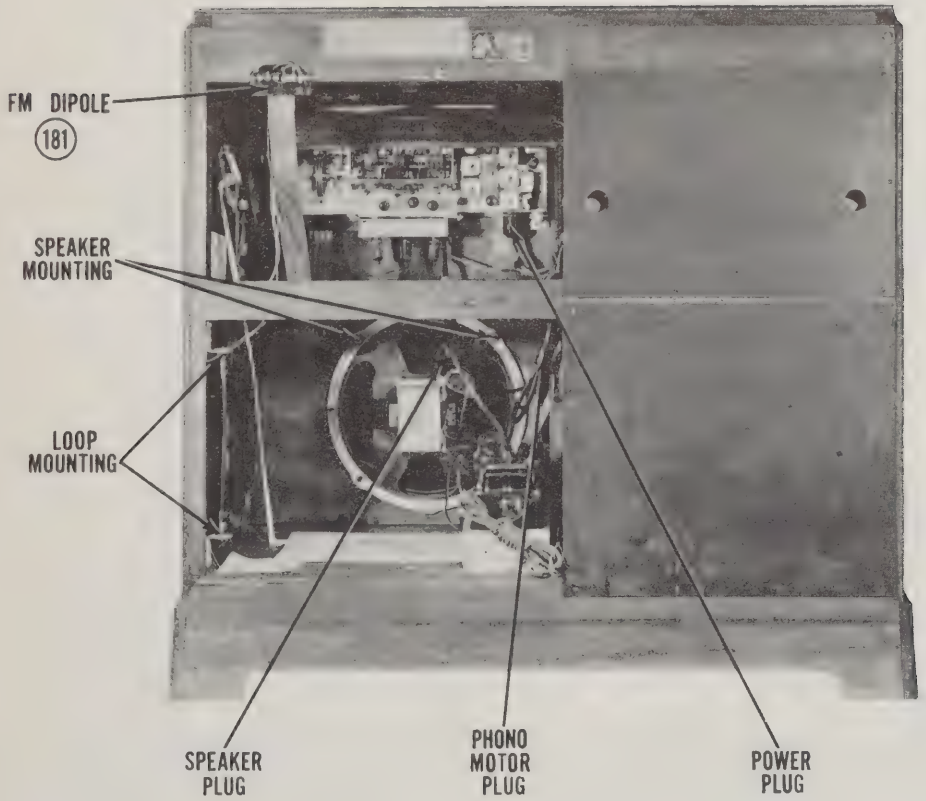
AM ALIGNMENT

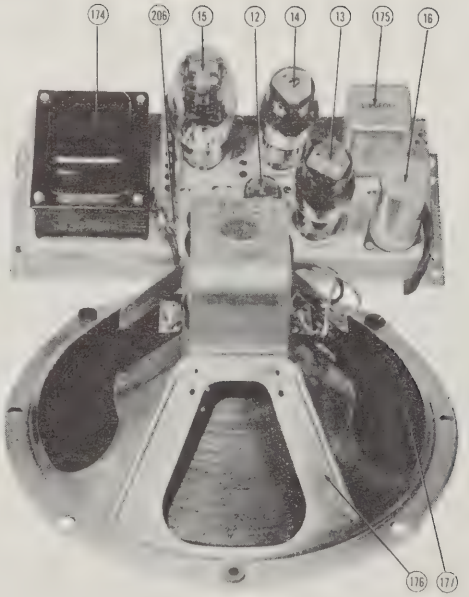
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7.	.01MFD	High side to Pin 1 (Grid) 6BA6 FM Mixer Tube (3). Low side to chassis.	455KC	Band C (Short wave one position counter clockwise).	Tuning cap fully open	Across Voice Coil	A10, A11	Shunt 10KΩ resistor across primary of AM 2nd IF transformer (191) and adjust A10 for maximum output. Transfer shunt to secondary and adjust A11 for maximum output.
8.	.01MFD	"	"	"	"	"	A12, A13	Transfer shunt of previous step to primary of AM 1st IF transformer (189) and adjust A12 for maximum output. Transfer shunt to secondary and adjust A13 for maximum output. Remove 10KΩ shunt resistor.
9.	150Ω carbon res. in series with 30MMFD cap.	High side of sig. gen. to 150Ω carbon resistor. 30MMFD cap to ant. terminal #3. Low side of sig. gen. to chassis.	15.5MC	"	15.5MC	"	A14	Adjust for maximum output. Tune sig. gen. to 16.4MC. If signal is not heard retune sig. gen. to 15.5MC and open A14, to next peak. Adjust A14, for maximum output and recheck for image.
10.	"	"	"	"	Tune for maximum output.	"	A15, A16	Rock tuning cap and adjust for maximum output.
11.	"	"	9.5MC	"	9.5MC	"	A17	Adjust for maximum output. Tune sig. gen to 10.4MC. If signal is not heard retune sig. gen. to 9.5MC and open A17 to next peak. Adjust for maximum output and recheck for image.
12.	"	"	"	"	Tune for maximum output.	"	A18, A19	Adjust for maximum output. Repeat steps 9, 10, 11, and 12 until no further improvement can be made.
13.	200MMFD cap.	High side to red loop lead(primary). Low side to chassis.(Link must be disconnected)	1400KC	Band A (broadcast Two positions counter clockwise)	1400KC	"	A20	Adjust for maximum output.
14.	200MMFD cap.	"	"	"	Tune for maximum output.	"	A21, A22	Adjust for maximum output.
15.	200MMFD cap.	"	600KC	"	600KC	"	A23, A24, A25	Adjust for maximum output. Repeat steps 13, 14, and 15 until no further improvement can be made. Continue with FM RF alignment.

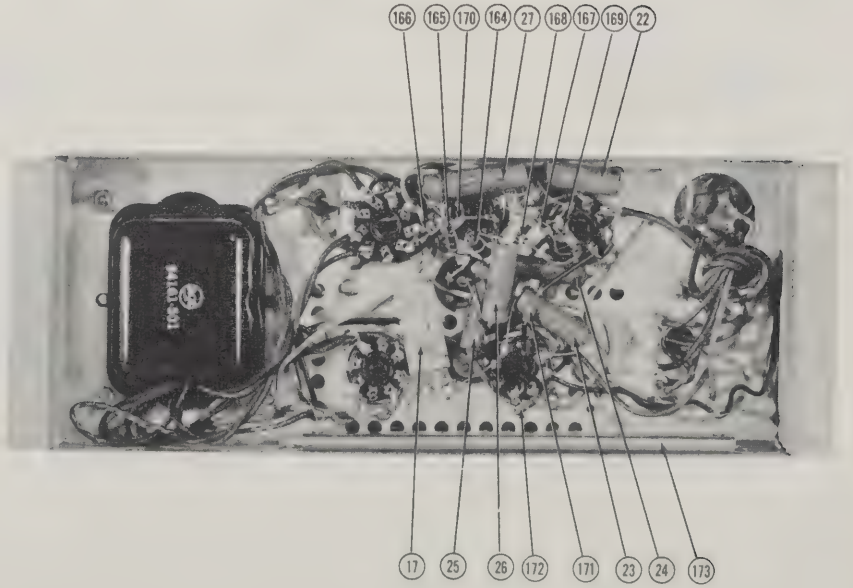
FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
16.	Two 120Ω carbon res.	Each side in series with 120Ω resistor to FM ant. terminals "1 and 2".	106MC (Unmod.)	FM (fully clockwise)	106MC	DC Probe to Point A. Common to chassis.	A26	Adjust for maximum deflection.
17.	Two 120Ω carbon res.	"	88MC	"	88MC	"	A27	Adjust for maximum deflection. Repeat steps 16 and 17 until no further improvement can be made. (If two peaks are found in step 17 use peak with core farthest out.)
18.				"	106MC	"	A28	Adjust for maximum deflection. (Noise voltage) If two peaks are found use peak with greatest capacity.
19.				"	90MC	"	A29	Adjust for maximum deflection. (Noise voltage) Repeat steps 18, 19 until no further improvement can be made. (If 2 peaks are found use peak with core farthest out.
20.				"	106MC	"	A30	Adjust for maximum deflection (noise voltage).
21.				"	90MC	"	A31	Adjust for maximum deflection (Noise voltage). Repeat steps 20, and 21 until no further improvement can be made. Install receiver in cabinet.

With receiver installed in cabinet tune in weak station near 1400KC and adjust A22 for maximum volume.







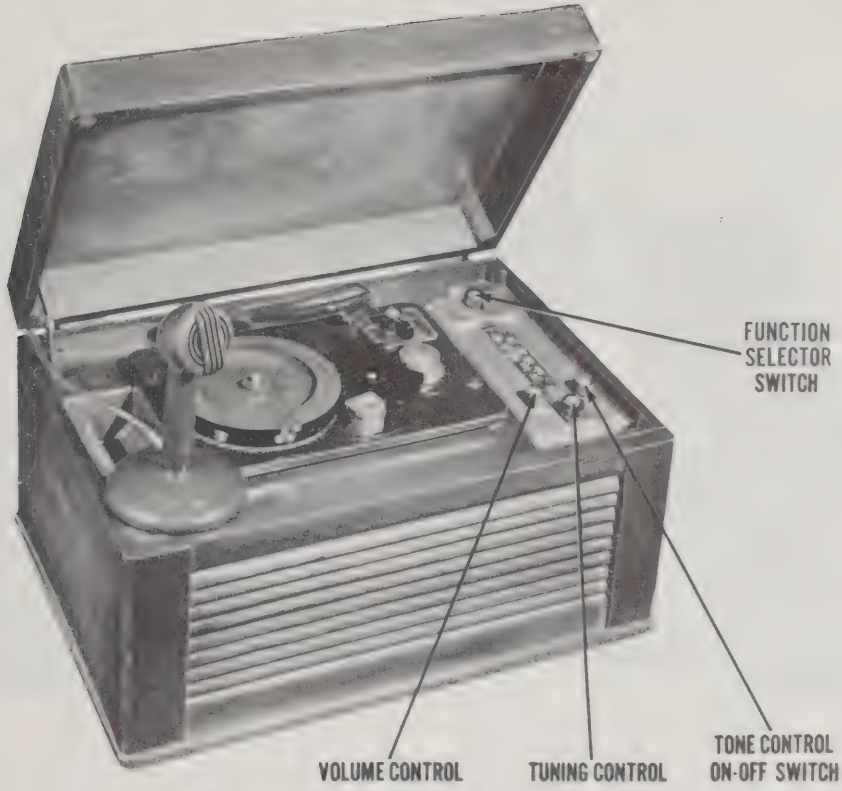
DISASSEMBLY INSTRUCTIONS

1. Remove six push-on type control knobs.
2. Remove four control shaft bushings from front panel.
3. Disconnect phono motor plug and remove phono pickup plug from rear of tuner chassis.
4. Remove power plug and audio plug from rear of tuner chassis.
5. Remove antenna plug from rear of tuner chassis.
6. Remove speaker plug from speaker.
7. Remove three 5/16" hex nuts holding speaker. Remove speaker.
8. Remove escutcheon.
9. Remove two wood screws holding front tuner chassis mounting bracket.
10. Remove four 1/4" hex head metal screws from rear of tuner chassis mounting brackets. Hold chassis from falling while performing this operation. Remove chassis.
11. Remove three machine screws holding output chassis. Remove output chassis.

PHOTOFACT* Folder

*TRADE MARK

SILVERTONE MODELS 8086 (Ch. 101.814-5C), 8086A, B (Ch. 101.814-6C), 8102, B (Ch. 101.814-2B), 8102A (Ch. 101.814-3B)



SILVERTONE MODEL 8086A

TRADE NAME Silvertone, Models 8086 (Ch. 101.814-5C), 8086A, 8086B (Ch. 101.814-6C), 8102 8102B, (Ch. 101.814-2B), 8102A (Ch. 101.814-3B)

SUPPLIER Sears, Roebuck & Co. 925 S. Homan St., Chicago, Illinois

TYPE SET AC Operated Combination Phono-Wire Recorder-Radio, Superheterodyne Receiver with Loop Antenna.

TUBES(EIGHT) Types 14Q7 Converter, 14A7 IF Amp., 7C6 DET-AVC-AF, 1280 Recorder Pre-Amp., 50A5 Erase Osc., 50A5 Power Output (2) 35Y4 Rectifier.

POWER SUPPLY 110-120 Volts AC

TUNING RANGE-BROADCAST 540-1700KC RATING .43 Amp. @ 117 Volts AC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning cap fully closed and set pointer to low freq. end limit mark at top left edge of dial backplate.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 6 (Grid) of 14Q7. Low side to chassis.	455KC	Tuning cap fully closed.	Across Voice Coil	A1, A2 A3, A4	Adjust for maximum output.
2.	200MMFD	High side to external ant. terminal. Low side to chassis.	1400KC	1400KC calibration mark on top right edge of dial backplate.	"	A5	" " " "
3.	200MMFD	"	"	Tune for maximum output.	"	A6	" " " "

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."

"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 5/49 499-18 SET #61 FOLDER 18

SILVERTONE MODELS 8086 (Ch. 101.814-5C), 8086A, B (Ch. 101.814-6C), 8102, B (Ch. 101.814-2B), 8102A (Ch. 101.814-3B)

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
1	Converter	14Q7	14Q7	8AL	
2	IF Amp.	14A7	14A7	8V	
3	DET-AVC-AF	7C6	7C6	8W	
4	Recorder Pre-Amp.	1280	1280		
5	Erase Osc.	50A5	50A5	6AA	
6	Power Output	50A5	50A5	6AA	
7	Rectifier	35Y4	35Y4	5AL	
8	Rectifier	35Y4	35Y4	5AL	

CAPACITORS

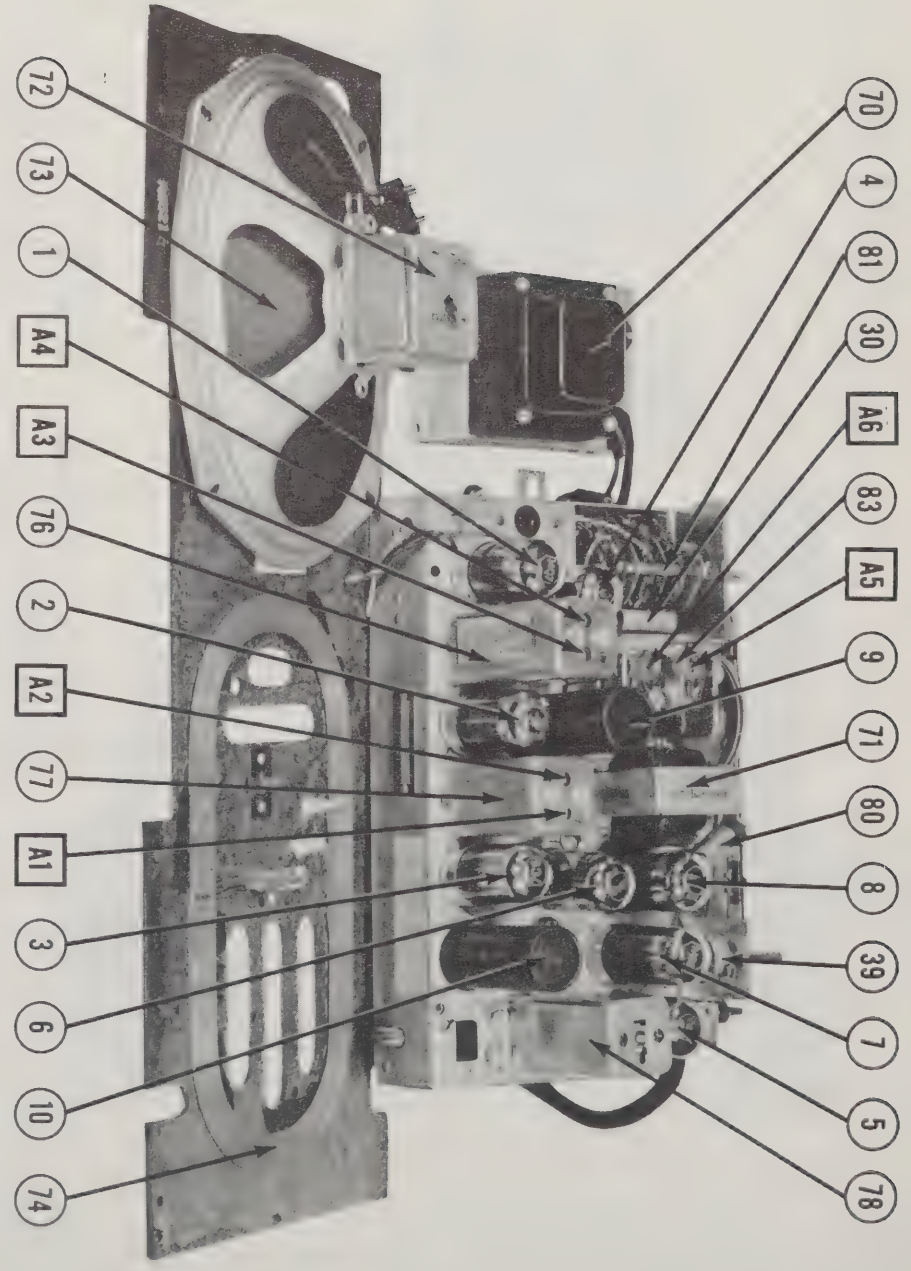
Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
9A	40	150	R60416	AF88D4A	UP44156		DY-305	EL-352	▲ Filter
B	40	150							■ Filter
C	20	25							Cathode Bypass
10A	40	200	R61507		UP6BJ35		DY-50-350	EL-245	▲ Filter
B	40	200					M-40-350		■ Filter
11	40	200	R61517	PRS450/40	BR4025		M-40-350	UT-402	Decoupling
12	.01	600		684-01	GT6S1		ST-6-01	TC-11	Output Plate Bypass
13	.01	400		484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Audio Coupling
14	.005	600		684-005	GT6D5	GP2M-005	ST-6-005	TC-25	" "
15	.004	400		484-004	GT6D4		ST-6-004	TC-24	Tone Compensation
16	.02	200		484-02	GT2S2		ST-4-02	TC-12	" "
17	.01	600		684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	Bias Osc. Grid Cap.
18	.1	400		484-1	GT4F1		ST-4-1	TC-1	Decoupling
19	.004	600		684-004	GT6D4		ST-6-004	TC-24	Bias Osc. Coupling
20	.003	600		684-003	GT6D3	GP2M-003	ST-6-003	TC-23	Tone Compensation
21	.001	600		684-001	GT6D1	GP2L-001	ST-6-001	TC-21	" "
22	.05	400		484-05	GT4S5		ST-4-05	TC-15	Recorder Coupling
23	.01	600		684-01	GT6S1	GP2-335-01	ST-6-01	TC-11	Tone Compensation
24	.05	400		484-05	GT4S5		ST-4-05	TC-15	" "
25	.1	200		484-1	GT2P1		ST-2-1	TC-1	Recorder Coupling
26	.05	400		484-05	GT4S5		ST-4-05	TC-15	Pre-Amp. Screen Bypass
27	.05	400		484-05	GT4S5		ST-4-05	TC-15	Audio Coupling
28	.002	600		684-002	GT6D2	GP2M-002	ST-6-002	TC-22	Tone Compensation
29	.001	600		684-001	GT6D1	GP2L-001	ST-6-001	TC-21	" "
30	.02	200		484-02	GT2S2		ST-4-02	TC-12	" "
31	.01	400		484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Audio Coupling
32	.05	200		484-05	GT2S5		ST-4-05	TC-15	RF Bypass Pwr. Supply
33	.05	200		484-05	GT2S5		ST-4-05	TC-15	AVC Filter
34	.05	200		484-05	GT2S5		ST-4-05	TC-15	" "
35	.05	400		484-05	GT4S5		ST-4-05	TC-15	Bias Filter
36	.01	400		484-01	GT4S1	GP2-335-01	ST-4-01	TC-11	Osc. Tuning Cap Isolation
37	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass
38	50	500		1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	
39A	500KΩ	½	R61128	D18-133X	T-88	Volume Control tapped @ 50KΩ
B	Shaft		Not Req.	A	Not Req.	Attach to 39A Per Instructions
40A	2 Meg.	½	R61864	D13-139	M-66-Z	" " " " "
B	Shaft		Not Req.	A	Not Req.	Tone Control
C	Switch		Not Req.	41	SW-A	Attach to 40A Per Instructions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	
41	100Ω	½		BW-½-100	Br.-Blk.-Br. Conv. Cathode
42	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. AVC Net
43	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. " "
44	22KΩ	½		BTS-22K	Red-Red-Or. Osc. Grid
45	10KΩ	½		BTS-10K	Br.-Blk.-Or. Tone Compensation
46	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vl.-Grn. AF Grid
47	2.2 Meg.	½		BTS-2.2 Meg.	Red-Red-Grn. AF Plate Load
48	470KΩ	½		BTS-470K	Yl.-Vl.-Yl. Output Grid
49	15Ω	½		BW-½-150	Br.-Grn.-Br. Output Cathode
50	1500Ω	1		BTA-1500	Br.-Grn.-Red Filter
51	25Ω	1	R40232		Red-Grn.-Blk. Surge Limiter
52	15KΩ	1		BTA-15K	Br.-Grn.-Or. Tone Compensation
53	150KΩ	½		BTS-150K	Br.-Grn.-Yl. Serie Neon Level Indic.
54	150KΩ	½		BTS-150K	Br.-Grn.-Yl. Tone Compensation
55	8200Ω	½		BTS-8200	Gray-Red-Red " "
56	10Ω	½		BW-½-10	Br.-Blk.-Blk. Voice Coil Shunt
57	18Ω	½		BW-½-18	Br.-Gray-Blk. " "
58	5Ω	1		BW-1-4.7	Series Voice Coil
59	1 Meg.	½		BTS-1 Meg.	Br.-Blk.-Grn. Phono Tone Comp.
60	47KΩ	½		BTS-47K	Yl.-Vl.-Or. Volume Cont. Shunt
61	56Ω	½		BW-½-56	Grn.-Blue-Blk. Parasitic Supp.
62	33KΩ	½		BTS-33K	Or.-Or.-Or. Bias Osc. Grid
63	4.7 Meg.	½		BTS-4.7 Meg.	Yl.-Vl.-Grn. Pre-Amp Grid
64	1.5 Meg.	½		BTS-1.5 Meg.	Br.-Grn.-Grn. Pre-Amp Screen
65	390KΩ	½		BTS-390K	Or.-White-Yl. Pre-Amp Plate Load
66	10MΩ	½		BTS-10K	Br.-Blk.-Or. Pre-Amp Decoupling
67	1200Ω	½		BTS-1200	Br.-Red-Red Filter
68	25Ω	1	R40232	BW-1-27	Red-Grn.-Blk. Surge Limiter
69	120KΩ	½		BTS-120K	Br.-Red-Yl. Tone Compensation

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
70	117VAC @ .43A	120VAC @ .24A Tap @ 100VAC @ .19A			R64566			

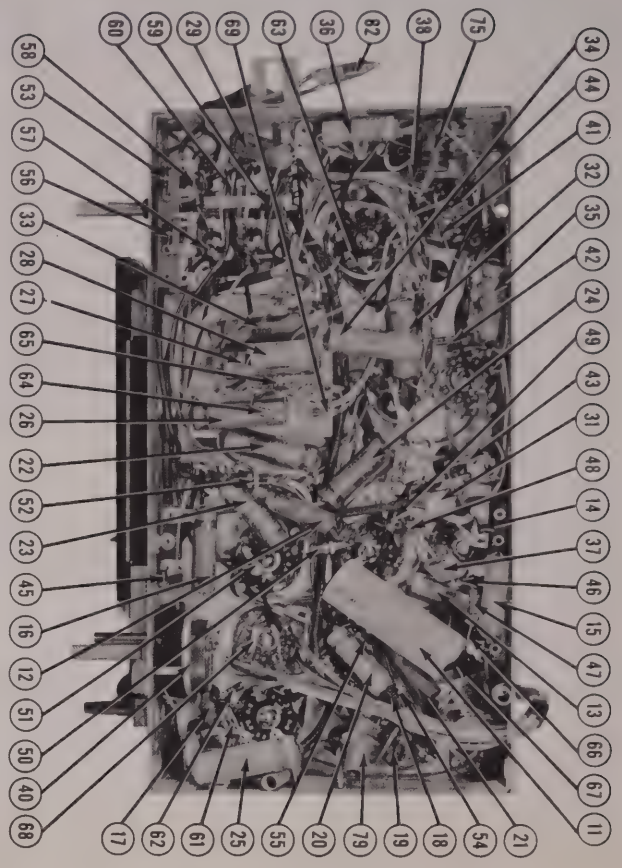
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
71	3000Ω	4.0Ω	302Ω Tap @ 18Ω and 7Ω	.5Ω	R61506				

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	
72	PM	4Ω	R65552		69A3	
	CONE DIA.	V. C. DIA.				
73	6X9"	3/4"				

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

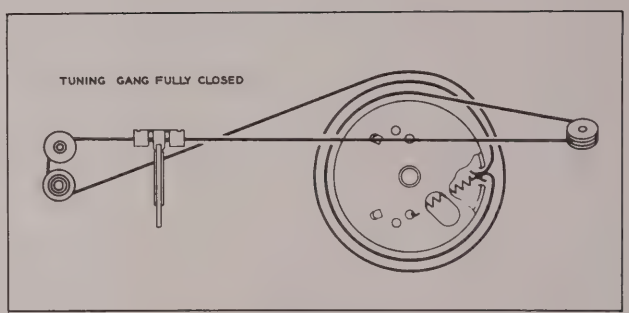
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA MEISSNER PART No.	
74A	Loop Ant.	0Ω	2Ω	R65216		(Ch. 101,814-5C,-6C)
B	Loop Ant.			R64589		(Ch. 101,814-2B,-3B)
75	Osc. Coil	.5Ω	6Ω	R61107	14-1060	
76	Input IF	14Ω	13Ω	R61111	16-6658	
77	Output IF	12Ω		R61142		
78A	Bias Osc.		6.5Ω	R64696		(Ch. 101,814-3B,-5C,-6C)
B	Bias Osc.			R61519		(Ch. 101,814-2B)
79	RF Choke		22Ω	R43050		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA SILVERTONE PART No.		NOTES
80	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
81	Switch	R62695	Function
82	Lamp	R45981	Neon
83	2 Gang Var. Cap.	R61100	(38-493MMF, 30-195MMF)
	Pointer Assby.	R62077	Dial



DIAL CORD DRIVE

VOLTAGE AND RESISTANCE READINGS TAKEN IN BROADCAST POSITION.
Functional switch in record radio position for V & R measurements.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	7VAC	78VDC	78VDC	§-6VDC	.9VDC	0V	9VDC	20VAC
2	14A7	33VAC	78VDC	78VDC	0V	0V	-.2VDC	0V	20VAC
3	7C6	7VAC	50VDC	-.4VDC	0V	0Vv	-.4VDC	0V	0V
4	1280	13VAC	25VDC	13VDC	0V	0V	0V	0V	0V
5	50A5	13VAC	150VDC	150VDC	150VDC	§-39VDC	§-39VDC	0V	65VAC
6	50A5	33VAC	113VDC	78VDC	0V	0V	0V	5.8VDC	90VAC
7	35Y4	105VAC	120VAC	0V	90VAC	163VDC	0V	163VDC	65VAC
8	35Y4	120VAC	115VAC	118VDC	115VAC	118VDC	0V	120VDC	90VAC

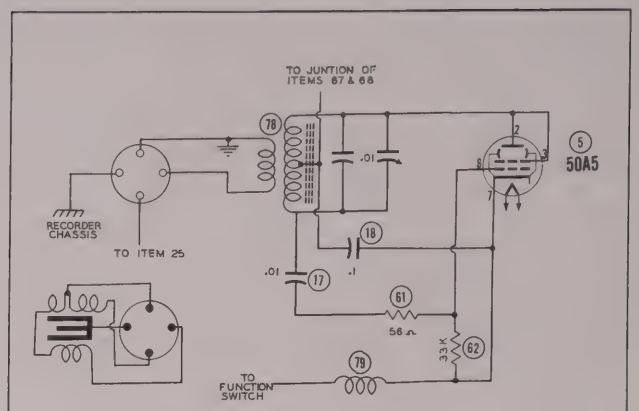
§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	14Q7	7Ω	62KΩ	62KΩ	22KΩ	100Ω	2.3 Meg.	100Ω	17Ω
2	14A7	25Ω	62KΩ	62KΩ	0Ω	0Ω	1.3 Meg.	0Ω	17Ω
3	7C6	7Ω	2.3 Meg.	4.7 Meg.	0Ω	0Ω	220KΩ	0Ω	0Ω
4	1280	12Ω	530KΩ	1.6 Meg.	0Ω	0Ω	4.7 Meg.	0Ω	0Ω
5	50A5	12Ω	130KΩ	130KΩ	120KΩ	33KΩ	33KΩ	0Ω	25Ω
6	50A5	25Ω	60KΩ	62KΩ	Inf.	Inf.	470KΩ	150Ω	28Ω
7	35Y4	10Ω	12Ω	0Ω	16Ω	60KΩ	Inf.	130KΩ	25Ω
8	35Y4	12Ω	14Ω	60KΩ	14Ω	60KΩ	Inf.	60KΩ	28Ω

RESISTANCE READINGS IN THE B+ CIRCUITS MAY VARY WIDELY ACCORDING TO THE CONDITION OF THE FILTER CAPACITORS

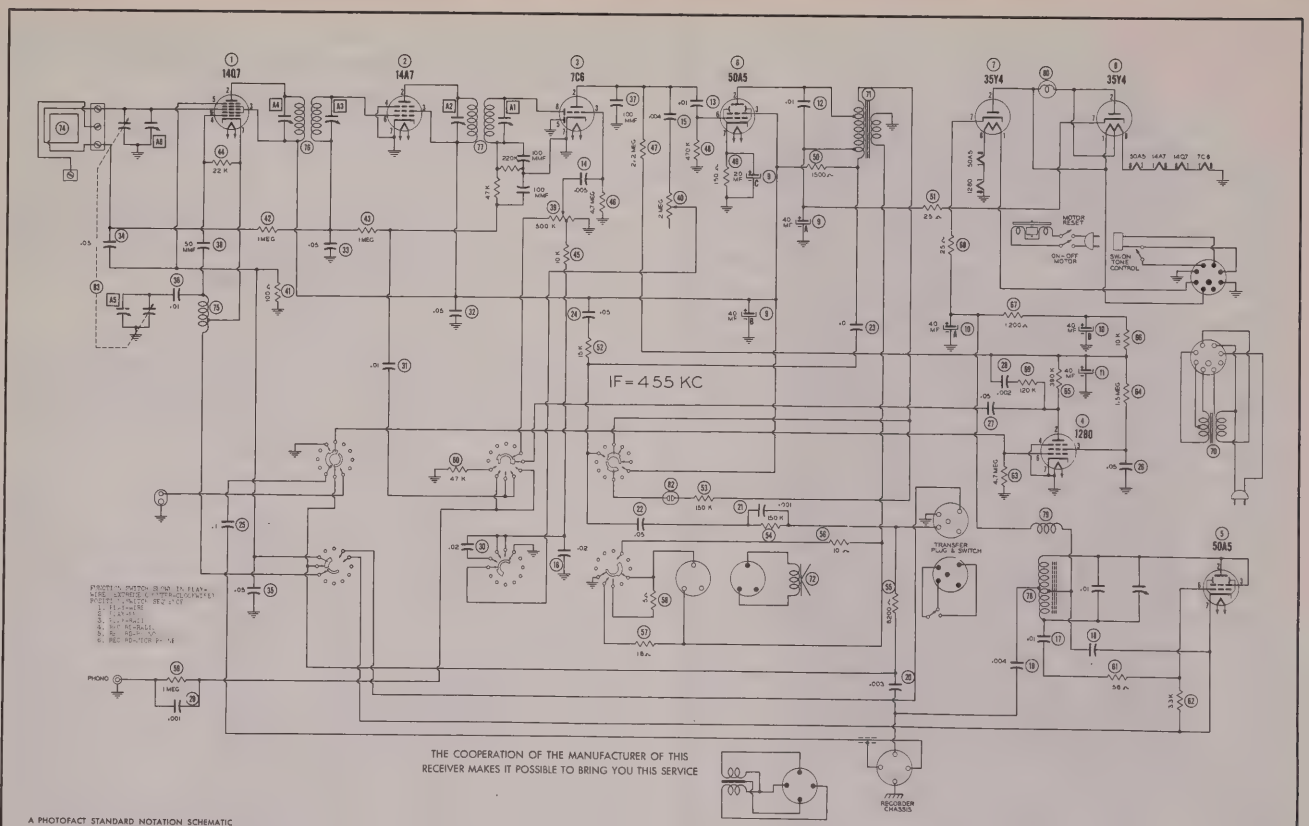
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



ERASE OSCILLATOR CIRCUIT FOR CH. 101. 814-6C

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949



THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

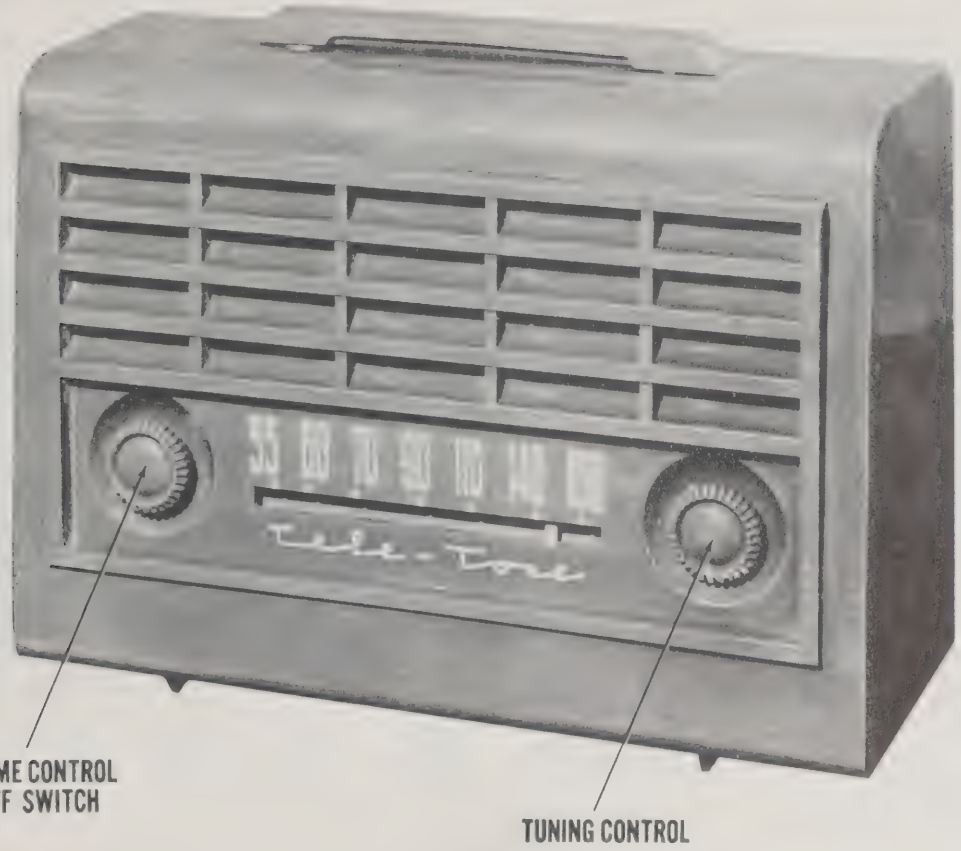
A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

499-18

DATE 5/49 499-18 SEP #61 FOLDER 16

TELE-TONE MODEL 190 (Ch. SERIES A)
BATTERY-LINE OPERATED



TELE-TONE MODEL 190

TRADE NAME	Tele-Tone, Model 190 (Ch. Series AZ)
MANUFACTURER	Tele-Tone Radio Co., 540 W. 58th St. New York 19, New York
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 1R5 Converter, 1U4 IF Amp., 1U5 DET-AVC-AF, 3S4 Power Output, 117Z3 Rectifier
POWER SUPPLY	110-120 Volts AC-DC or 4.5 Volts "A" Supply and 67.5 Volts "B" Supply
RATING	.15 Amp., @ 117 Volts AC or 108MA @ 4.5 Volts DC and 8MA @ 67.5 Volts DC
TUNING RANGE—BROADCAST	532.5-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set left hand edge of dial pointer 9/16" from left hand edge of dial backplate.

Use isolation transformer if available. If not connect a .1 MFD capacitor in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to rear stator of tuning cap.	455KC	Tuning cap fully open	Across voice coil	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200 MMF to reduce modulation.
2.	.1MFD	"	1620KC	"	"	A5	Adjust for maximum output.
3.		Loop	1400KC	Tune for maximum output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust of maximum output.

TELE-TONE MODEL 190 (Ch. SERIES A)
BATTERY-LINE OPERATED

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TELE-TONE MODEL 190

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA TELE-TONE PART No.	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	1R5	1R5	7AT	
V2	IF Amp.	1U4	1U4	6AR	
V3	DET-AVC-AF	1U5	1U5	6BW	
V4	Power Output	3S4	3S4	7BA	
V5	Rectifier	117Z3	117Z3	4BR	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA TELE-TONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
[illegible]	[illegible]	[illegible]	CB-1[illegible]	PRSA150/40 -40	EDL4415		DSB-2x40 -150	TA-440	Green Filter
B	40	150		PRS12/250	BRH1225		M-250-12	UHC-212	Red Filter Output Cath. Bypass
C	200	10							
C2	47	500	CM-470-1	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap.
C3	.05	200	CP-503-2	P288-05	GT2S5		ST-4-05	68P16	AVC Filter
C4	.1	200	CP-104-1	P288-1	GT2P1		ST-2-1	68P17	Line Isolation
C5	[illegible]	[illegible]	CP-103-2	P288-01	GT2S1	GP2-335-01	TST-2-01	68P14	Osc. Anode Decoupling
C6	.05	200	CP-503-2	P288-05	GT2S5		TST-2-05	68P16	Filament Bypass
C7	.01	150	CP-103-2	P488-01	GT2S1	GP2-335-01	TST-2-01	68P14	1st IF Grid Filter
C8	.05	200	CP-503-2	P288-05	GT2S5		TST-2-05	68P16	1st IF Cath. Bypass
[illegible]	[illegible]	[illegible]	Note	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C10	.001	200	Note			GP2L-001	TST-2-001	68P1	Audio Coupling
C11	.01	150	Note	P288-01	GT2S1	GP2-335-01	TST-2-01	68P14	AF Screen Bypass
C12	100	500	Note	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass
C13	.002	400	Note			GP2M-002	TST-2-002	68P2	Audio Coupling
C14	.005	400	CP-502-2	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Output Plate Bypass
C15	.05	400	CP-503-1	P488-05	GT4S5		ST-4-05	TM-15	Rect. Bypass

Note. Some models combine items C9, C10, C11, C12, and C13 into one unit obtainable under MFGRS Part No. CC-5-1.

CONTROLS

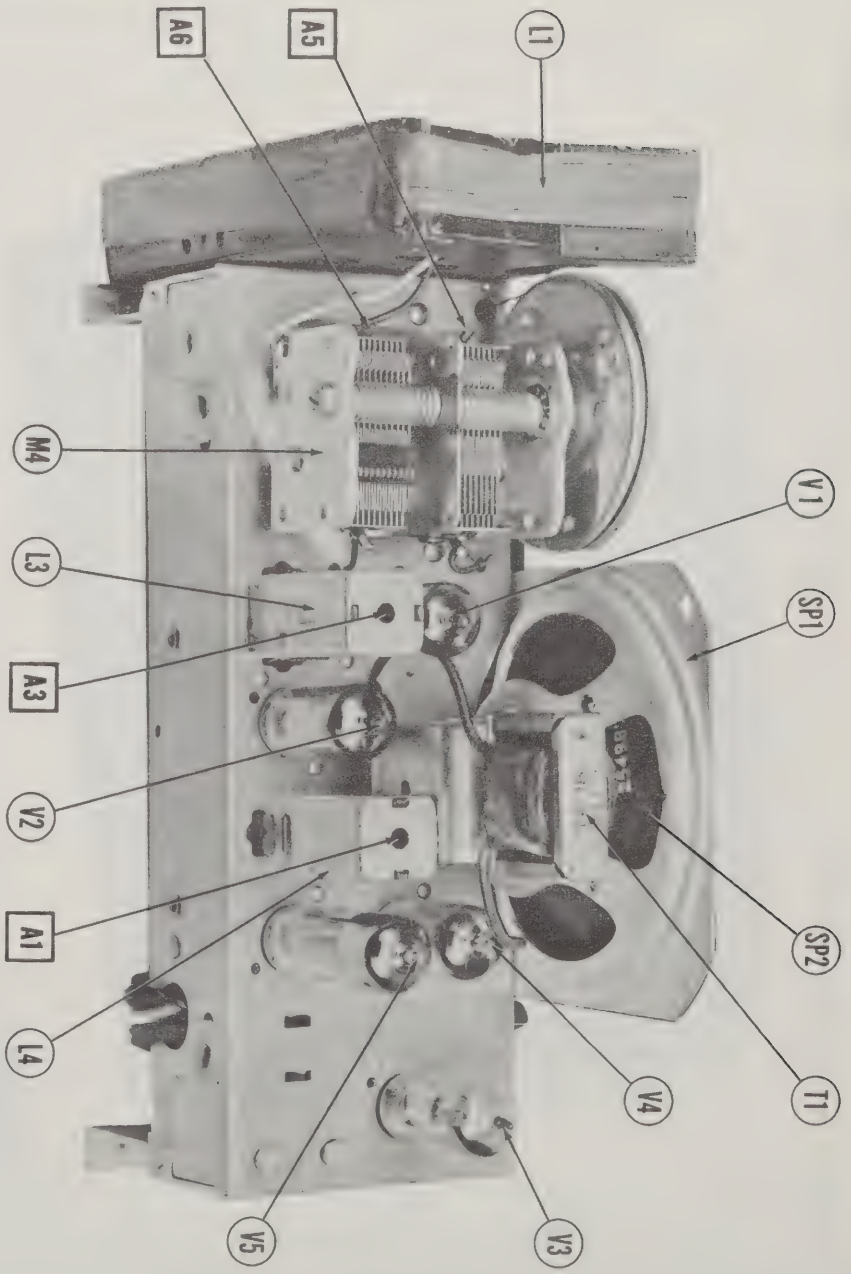
ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA TELE-TONE PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg.	[illegible]	VC-16	D13-137	M-63-2	Volume control
[illegible]	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
S	Switch		Not Req.	42	SW-A2	" " " " "

RESISTORS

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA TELE-TONE PART No.	IRC PART No.	IDENTIFICATION CODES	
R1	100 Ohms	2	RC-104-1	BTS-100K	Br.-Blk.-Yl.	Osc. Grid
R2	100[illegible]	2	RC-153-1	BTS-15K	Br.-Grn.-Or.	Osc. Anode Decoupling
R3	10 Meg.	½	RC-106-1	BTS-10 Meg.	Br.-Blk.-Blue	IF Grid
R4	[illegible]	½	RC-222-2	BTS-2200	Red-Red-Red	IF Filament
R5	3.3 Meg.	½	RC-335-1	BTS-3.3 Meg.	Or.-Or.-Grn.	AVC Network
R7	10 Meg.	½	RC-106-1	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid
R8	3.3 Meg.	½	RC-335-1	BTS-3.3 Meg.	Or.-Or.-Grn.	AF Screen
R9	1 Meg.	½	RC-105-1	BTS-1 Meg.	Br.-Blk.-Grn.	AF Plate
R10	2.2 Meg.	½	RC-225-1	BTS-2.2 Meg.	Red-Red-Grn.	Output Grid
R11	[illegible]	½	RC-6B1-2	BTS-6B0	Blue-Gray-Br.	Bias Network
R12	1[illegible]	2	RC-1[illegible]-2	BTS-1800	Br.-Grn.-Red	Filament String
R13	390	½	RC-391-2	BW-½-390	Or.-White-Br.	" "
R14	[illegible]	½	RC-3[illegible]-2	BW-½-39	Or.-White-Blk.	Filament Dropping
R15	[illegible]	2	RC-270-3	BW-2-27	Red-Vi.-Blk.	" "
R16	[illegible]	10	RP-5	ABA-3000 #		" "
R17	[illegible]	1	RC-622-5	BTA-6200	Blue-Red-Red	Filter
R18	1[illegible]	½	RC-180-1		Br.-Gray-Blk.	Rectifier Ballast

Set slider at 2550Ω

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TELE-TONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	6300Ω	3.7Ω	340Ω	.4Ω	Part of SP-41-18	A-3328 †	RO-11 †	A-2998 †	† Bend mounting tabs down and mount on original bracket.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			TELE-TONE PART No.	JENSEN PART No.	QUAM PART No.	
	[illegible]	[illegible]	SP-41-18	ST-113 * MOD. P4-X	4A07 *	* Remount output transformer.

R F COILS

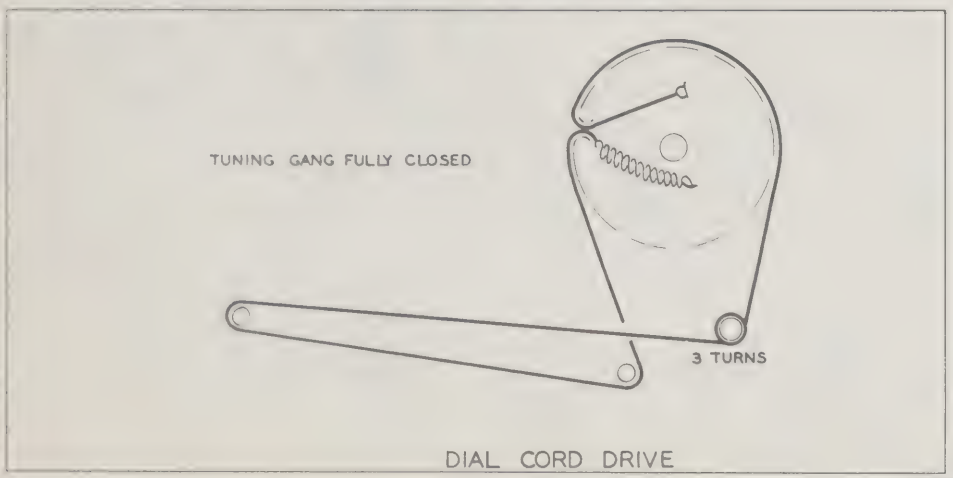
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	TELE-TONE PART No.	MEISSNER PART No.
L1	Loop Ant.	3Ω		LF-15	
L2	Osc. Coil	1.5Ω	7Ω	LC-6	
L3	Input IF	24Ω	24Ω	LF-22	16-6668
L4	Output IF	24Ω	24Ω	LF-22	16-6669

BATTERIES

ITEM No.	VOLTAGE	TELE-TONE PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	4.5V "A"		746			F3			
M2	67.5V "B"			467			XX45		

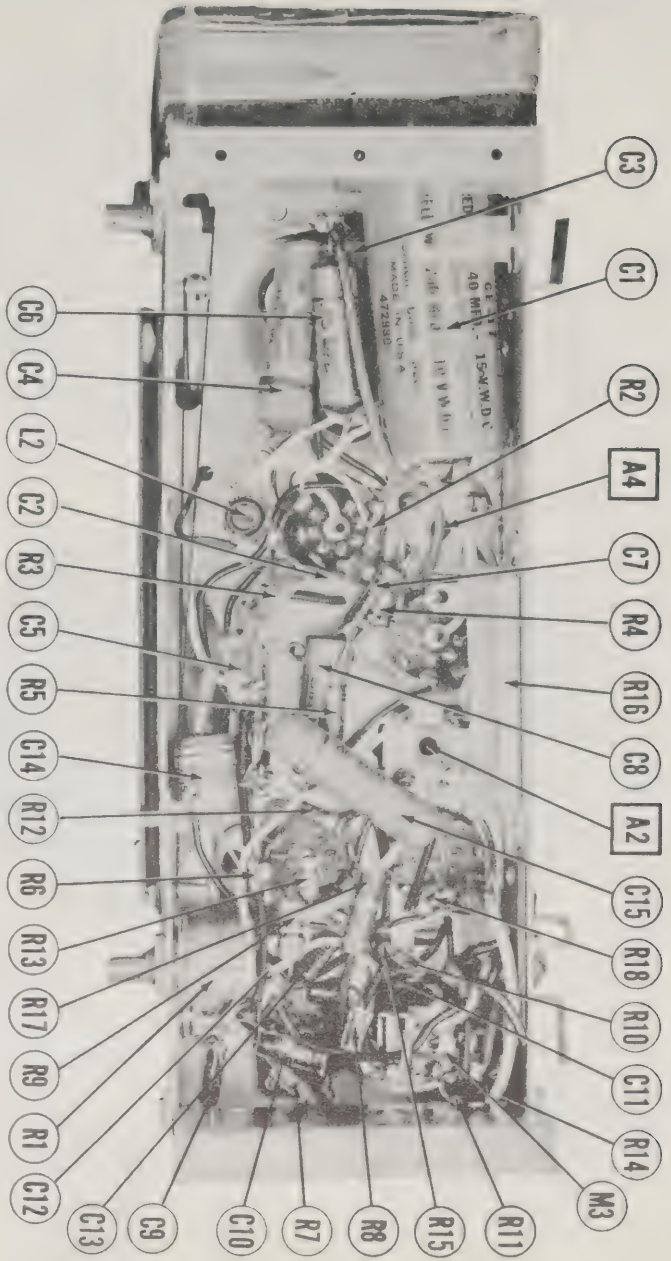
MISCELLANEOUS

ITEM No.	PART NAME	TELE-TONE PART No.	NOTES
M3	Switch	SW-11	AC/DC-Batt.
M4	2 Gang Var. Cap.	CV-15	(28-392pF, 31-178MMF)

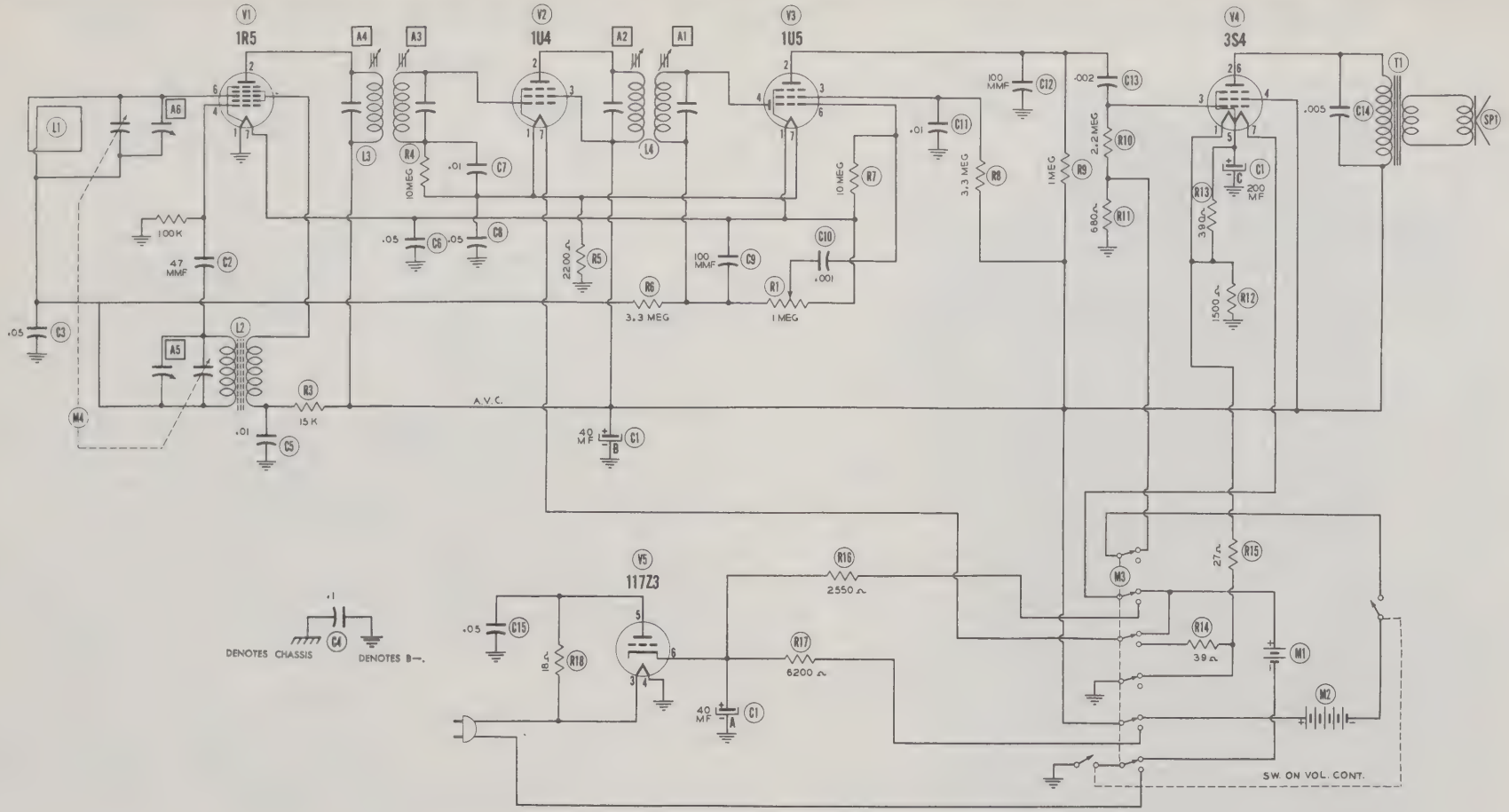


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



TELE-TONE MODEL T-91



IF = 455 KC

VOLTAGE READINGS

VOLTAGE AND RESISTANCE READINGS TAKEN IN AC-DC POSITION.

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	0V	67VDC	45VDC	4-6.3VAC	0V	.1VDC	1.6VDC
V 2	1U4	2.3VDC	67VDC	67VDC	0V	2.3VDC	.1VDC	3.5VDC
V 3	1U5	1.6VDC	10VDC	10VDC	.2VDC	0V	.0V	2.3VDC
V 4	3S4	6.4VDC	68V.C	0V	68V.C	7.5VDC	68VDC	8.5VDC
V 5	117Z3	115VAC	0V	115VAC	0V	115VAC	120VDC	0V

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	∞	† 6KΩ	† 20KΩ	100KΩ	∞	4 Meg.	∞
V 2	1U4	∞	† 6KΩ	† 6KΩ	Inf.	∞	10 Meg.	∞
V 3	1U5	∞	† 1 Meg.	† 3.3Meg	1 Meg.	∞	10 Meg.	∞
V 4	3S4	∞	† 6KΩ	2.2 Meg.	† 6KΩ	∞	† 6KΩ	∞
V 5	117Z3	22K	Inf.	2K	2K	22K	42Ω	Inf.

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.
† Measured from pin 6 of V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

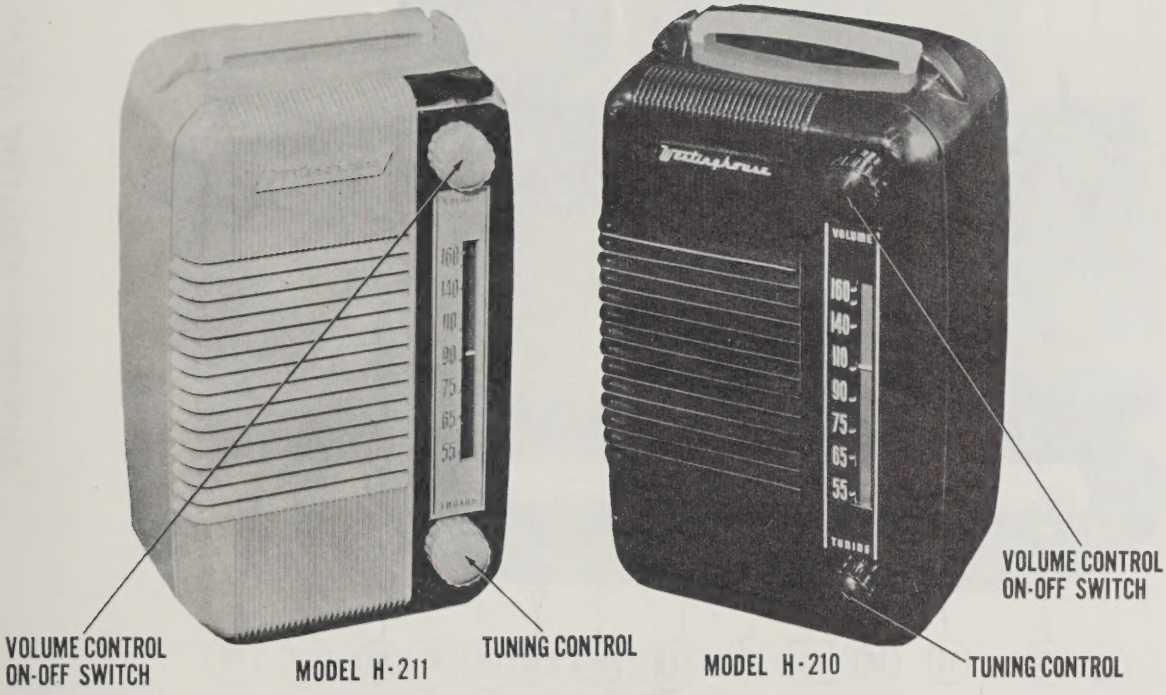
A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1949

499-19

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

WESTINGHOUSE MODELS H-210, H-211 (Ch. V-2144, V-2144-1)



WESTINGHOUSE MODEL H-210

TRADE NAME	Westinghouse, Models H-210, H-211 (Ch. V-2144, V-2144-1)
MANUFACTURER	Westinghouse Electric Corp., Receiver Div., Sunbury, Pa.
TYPE SET	AC-DC Operated Portable Superheterodyne Receiver with Loop Antenna
TUBES(FIVE)	Types 12BE6 Converter, 12BA6 1st IF Amp., 12AT6 DET-AVC-AF, 50C5 Power Output 35W4 Rectifier.
POWER SUPPLY	105-125 Volts AC-DC RATING .27 Amp., @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning Cap. fully closed and set left hand edge of pointer saddle 1/2" from left hand edge of dial backplate.

Use isolation transformer if available. If not connect a .1 MFD cap. in series with low side of signal generator and B-.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Ant. stator of tuning gang. Low side to B-.	455KC	Tuning cap fully closed	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy ant. to .001 MFD to reduce hum modulation.
2.		Loop	1615KC	Tuning cap fully open	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust of maximum output.
		Loop	1400KC	Tune for maximum output.	"	A6	Adjust for maximum output.

WESTINGHOUSE MODELS H-210, H-211 (Ch. V-2144, V-2144-1)

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

WESTINGHOUSE MODEL H-210

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12BE6	12BE6	7CH	
V2	IF Amp.	12BA6	12BA6	7BK	
V3	DET-AVC-AF	12AT6	12AT6	7BT	
V4	Power Output	50C5	50C5		
V5	Rectifier	35W4	35W4	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: WESTING. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	V-6230	PRSA150/50-50	EZ5515		DSB-2x50-150	TA-505	Filter Green
B	50	150							Filter Red
C2	.05	400	RCP10W4503A	P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C3A	150		Note	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
B	150		Note	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	" "
C4	470	500	RCM20A471M	1469-0005	5R5T5	GP2K-500	MOS.5-35	MS-35	Tone Comp.
C5	.02	400	RCP10W4203A	P488-02	GT4S2		ST-4-02	TM-12	" "
C6	.005	400	RCP10W4502A	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C7	.01	400	RCP10W4103A	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-14	"
C8	470	500	RCM20A471M	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Bypass
C9	.03	400	RCP10W4303A	P488-03	GT4S3		ST-6-03	TM-13	Output Plate Bypass
C10	.05	400	RCP10W4503A	P488-05	GT4S5		ST-4-05	TM-15	Line Filter
C11	.05	400	V-5618-1					72P1	Line Isolation

Note. Item C3A, C3B and R6 are combined into one unit obtainable under MFGRS No. V-6232-1.

CONTROLS

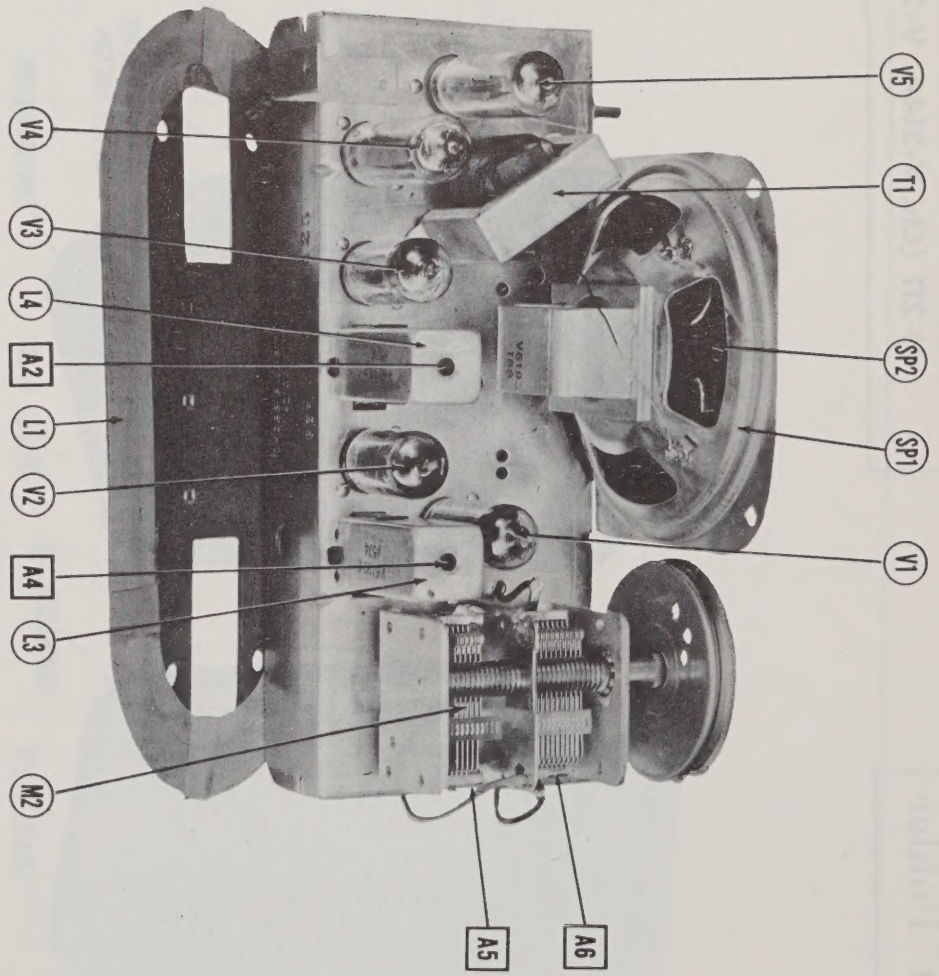
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTING. PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	V-6198-2	D13-133X	T-78	Volume control tapped @ 150KΩ
B	Shaft		Not Req.	A	Not Req.	Attach to R1A Per Instructions
C	Switch		Not Req.	41	SW-A	" " " " "

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTING-HOUSE PART No.	IRC PART No.	IDENTIFICATION CODES	
R2	22KΩ	½	RC10AE223M	BTS-22K	Red-Red-Or.	Osc. Grid
R3	68Ω	½		BW-½-68	Blue-Gray-Blk.	IF Cathode See Note 1
R4	2.2 Meg.	½	RC10AE225M	BTS-2.2 Meg.	Red-Red-Grn.	AVC Network
R5	10KΩ	½	RC10AE103M	BTS-10K	Br.-Blk.-Or.	Tone Comp.
R6	47KΩ	½	See Note	BTS-47K		Diode Filter
R7	10 Meg.	½	RC10AE106M	BTS-10 Meg.	Br.-Blk.-Blue	AF Grid
R8	330KΩ	½	RC10AE334M	BTS-330K	Or.-Or.-Yl.	AF Plate
R9	470KΩ	½	RC10AE474M	BTS-470K	Yl.-Vi.-Yl.	Output Grid
R10	120Ω	½	RC20AE121J	BW-½-120	Br.-Red-Br.	Output Cathode
R11	1200Ω	1	RC30AE122M	BTA-1200	Br.-Red-Red	Filter
R12	33Ω	½	RC20AE330M		Or.-Or.-Blk.	Rectifier Ballast See Note 2
R13	47Ω	½	RC30AE470M	BW-½-47	Yl.-Vi.-Blk.	Pilot Light Shunt See Note 2
R14	220KΩ	½	RC10AE224M	BTS-220K	Red-Red-Yl.	Line Isolation

Note Items C3A, C3B and R6 are combined into one unit and are obtainable under MFGRS Part No. V-6232-1.
Note 1. Some models use 100Ω resistor in this application.
Note 2. Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		WESTINGHOUSE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2400Ω	3.1Ω	230Ω TAP @ 15Ω	.5Ω	V-6233-1	A-3330	RO-3	A-3031	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			WESTINGHOUSE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-113		
SP1	PM	3.1Ω	V-62331	MOD. P4-X	4A07	
	CONE DIA.	V. C. DIA.				
SP2	3 15/16"	9/16"				

R F COILS

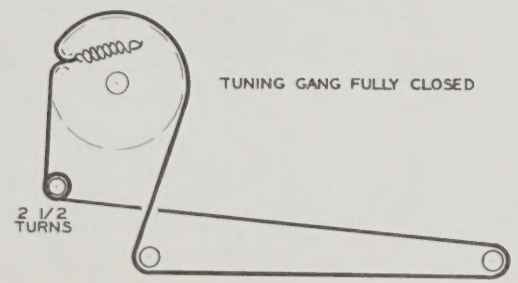
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	WESTINGHOUSE PART No.	MEISSNER PART No.	
L1	Loop Ant.	3Ω		V-6186		* Add 50MMF cap. from high side of tuning cap to Osc. Grid.
L2	Osc. Coil	.8Ω	12Ω	V-5851	*14-1060	
L3	Input IF	22Ω	22Ω	V-6199-2	16-6678	
L4	Output IF	22Ω	22Ω	V-6199-2	16-6678	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					WESTINGHOUSE PART No.		
M1	Bayonet	6-8V	0.15A	Brown	#47		Type #47

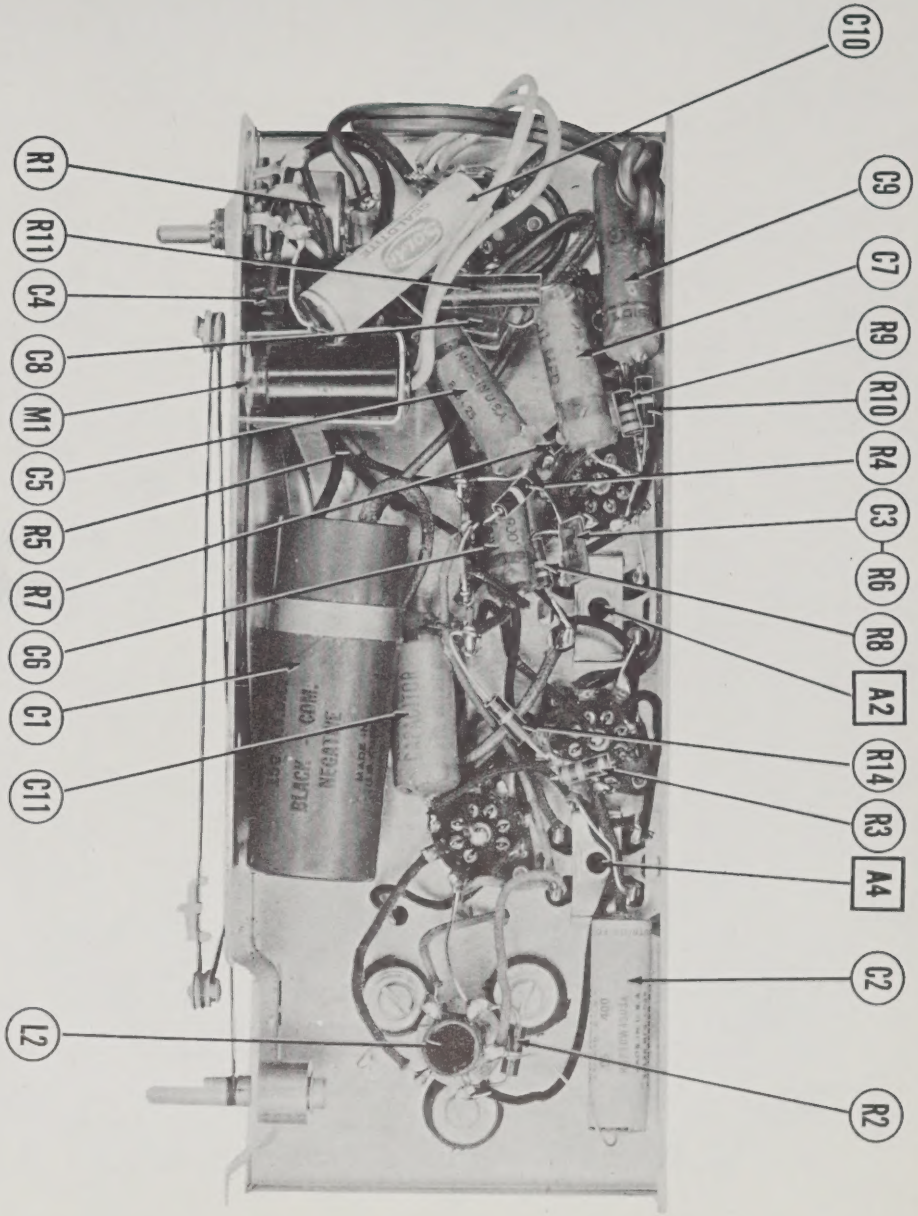
MISCELLANEOUS

ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
M2	2 Gang Var. Cap.	V-6231	(25-392MMF, 20-110MMF)
	Cabinet	V-1168-1	Model H-210
	Cabinet	V-1168-2	Model H-211
	Knob	V-6184-1	Model H-210
	Knob	V-6184-2	Model H-211
	Dial Pointer	V-6190	

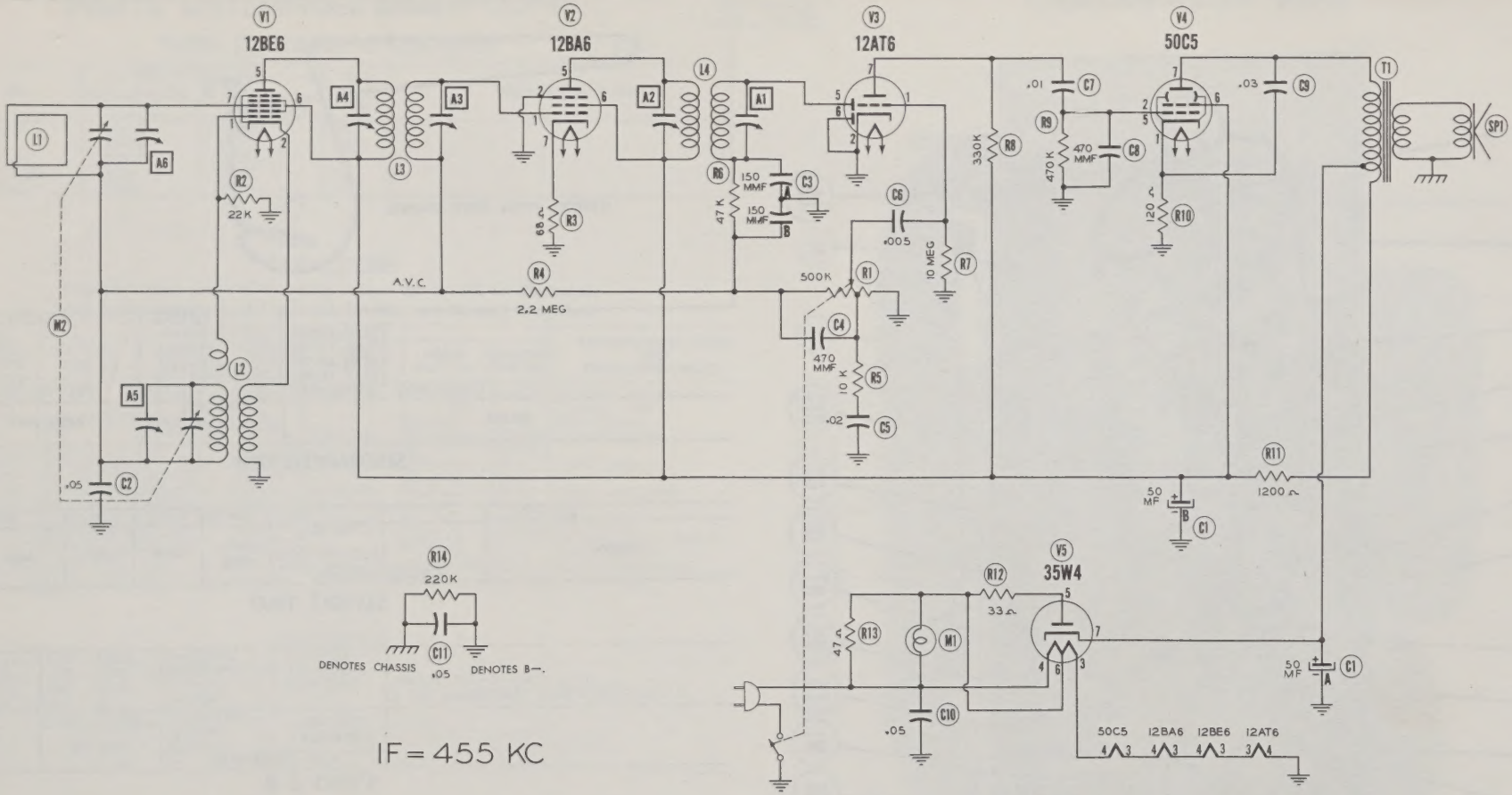


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



WESTINGHOUSE MODEL H-210



IF = 455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	§-7.2VDC	0V	13VAC	25VAC	90VDC	90VDC	-.1VDC
2	12BA6	-.1VDC	0V	25VAC	35VAC	90VDC	90VDC	.8VDC
3	12AT6	-.5VDC	0V	13VAC	0V	-.3VDC	0V	50VDC
4	50C5	5.2VDC	0V	35VAC	85VAC	0V	90VDC	107VDC
5	35W4	0V	115VDC	85VAC	117VAC	112VAC	112VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
1	12BE6	22KΩ	.8Ω	13Ω	24Ω	1200Ω*	1200Ω*	2.7 Meg.
2	12BA6	2.7 Meg.	0Ω	24Ω	36Ω	1200Ω*	1200Ω*	100Ω
3	12AT6	10 Meg.	0Ω	13Ω	0Ω	550KΩ	0Ω	330KΩ
4	50C5	120Ω	470KΩ	36Ω	80Ω	470KΩ	1200Ω*	220Ω*
5	35W4	Inf.	40KΩ	80Ω	110Ω	15KΩ	105Ω	40KΩ

* Measured from pin 7 of tube 5 (35W4)

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1949

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.